



FLIGHT



First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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EDITORIAL COMMENT.

The Aerial Derby. All greater London will be agog with excitement to-morrow (Saturday) afternoon on account of the race for the "Aerial Derby," which is the one flying event of the year which can be said to be of real, all-round popular interest. Not that there is no popular interest in flying, as the records of Hendon and Brooklands bear witness, but there is no event which gives so much of an open opportunity to the man in the street of seeing aeroplanes in flight over a long cross-country course. The promoters of the Aerial Derby did a far greater service to aviation than even they possibly knew when they decided upon its inauguration three years ago, at a time when there were many scoffers at such an "absurdity" as an aerial "Circuit of London." Of necessity, this course affords a chance, literally, to millions of seeing the machines at some point or other during the race, and thus there is aroused a widespread interest in the Derby itself, and what is even of more importance, in the possibilities of aircraft generally. We have always insisted on the point that part of our one-time backwardness in aviation was due to the fact that the people generally had, through lack of proper opportunities, failed to grasp the essential fact that the aeroplane had well emerged from the realms of pure experiment and had become a machine of vast potentialities, particularly in the scheme of national

defence. It is more than pleasing to be able to record the conviction that we have left behind us that state of backwardness. Not that the time has come when we can rest on our achievements, for much still remains to be done, much remains to be discovered, before aerial science will have said its last word—that time is still far off, even if it should ever arrive. Even in relation to our possible rivals for world supremacy, the situation is not at all without anxiety, though this much may be said: that we are in a far better position to-day than when it fell to us to comment upon the "Aerial Derby" of last year. Not only are we actually stronger in the air than we were at that time, but it is incontestable that the Government itself has since then thoroughly awakened to the importance of aviation, and, moreover, our flying men and aeroplane constructors have done things in the meantime which have demonstrated to the world that they are second to none. With regard to the Government attitude towards aviation, we need only refer to the marked difference in the treatment accorded by the authorities to the race of last year and that of this. In 1913, it will be remembered, endless difficulties were raised with regard to the "prohibited" areas which occur in any course which is laid to pass round London. In the early stages of the organisation the extreme step was taken of placing a virtual ban on the race, so that at one time it was most improbable that its organisers would be able to hold it at all in the manner projected by the donors of the trophy. After endless negotiation, and exasperating delays, the authorities so far gave way that the race was held as late as September, instead of in June as originally intended.

This year, however, there has been, so far as we are aware, no difficulty raised on the part of the authorities, who more than ever seem disposed to give to aviation all the encouragement possible. To our mind, much of this altered attitude is due to such races as this one for the "Aerial Derby," which have had an almost incalculable educative value in relation to the general public, the net result of it all being that there has been created an intelligent volume of opinion which has produced at least some effect on development. It has shown the authorities that matters affecting aerial defence are appreciated by the public in a measure approximating to those relating to other branches of national defence, and this must have had at least some effect upon policy. It makes all the difference when a responsible Minister can approach Parliament for the money for essential works, whether of

defence or of any other kind, with the knowledge that he has behind him a strong volume of public opinion. Without it he may succeed in his object—with it, he is in an almost impregnable position. It is for these reasons, apart altogether from the sporting interest of such contests—which is very great—that we welcome so important a race as that which is to be flown to-morrow. As we have said, although much has been done towards the education of the public in aerial matters there is much more remaining to be done, and there is no better way of carrying out the good work than by affording the people these opportunities of coming into real, live touch with the movement. Many will see the race to-morrow afternoon who cannot in the ordinary way visit the flying grounds—many who will see the machines in flight have never seen an aeroplane before, and will thus receive an impression of the reality of man-flight that they would get in no other way, to the manifest good of the movement.

The Mishaps to the Montrose Squadron. It was perhaps inevitable that comparisons should be made between the unfortunate ending of the "aerial mobilisation" of the Montrose squadron of the R.F.C. and the somewhat similar test which was recently so successfully carried out in Germany. The one was marvellously successful—the other, a tragic unsuccess. Those who have indulged in gloomy comparisons,

however, would have done well to consider all the facts before passing a judgment adverse to our own gallant officers of the R.F.C. It should be remembered, in the first place, that the German "mobilisation" took the form of a simple point-to-point journey, which is a far simpler affair than that to which the Montrose squadron was committed. We have no manner of doubt that if the squadron had simply been ordered to fly from its home station to Salisbury Plain in a straight-away flight, the whole of the machines would have arrived without serious mishap. But what was being attempted was a far different thing. The journey was to be done in a series of short flights, accompanied by the road transport of the squadron, a task which entailed numerous landings *en route*, which thus vastly enhanced the chances of mishap. Again, it must be remembered that climatic conditions in these islands are, generally speaking, much worse than they are on the Continent. As a matter of fact, it was those same climatic conditions which were the cause of the accidents. Fog and ground-mist are things which are quite beyond the control of man, but which have to be reckoned with, on almost every day of the year, and, as we have seen, are only too likely to play havoc with the man and machine so unfortunate as to be compelled to make a landing in them. We deplore the accidents as much as anyone, but we hold most strongly that they imply no doubt whatever of the skill or ability of the magnificent *personnel* of the R.F.C.

NORBERT CHEREAU.

HAVING completed his studies at Rennes University, Norbert Chereau turned his attention to art, but the cycle trade presented an irresistible attraction and eventually claimed him. Like many others, he seemed to naturally drift into the motor trade, and in 1893 came to England, where he became interested in the Blériot motor lamp business, subsequently becoming the London Manager. Having taken the keenest interest in the early flying experiments of M. Blériot, he naturally took charge of the arrangements for the memorable crossing of the Channel in July, 1909. After this he relinquished the

lamp business to devote himself entirely to aeronautics and established the Blériot branch in England, with the flying school at Hendon. Under his guidance the business developed rapidly, and the latest move has been the opening of new works for the production of British-built Blériots at Brooklands, to which place the flying school has been transferred.

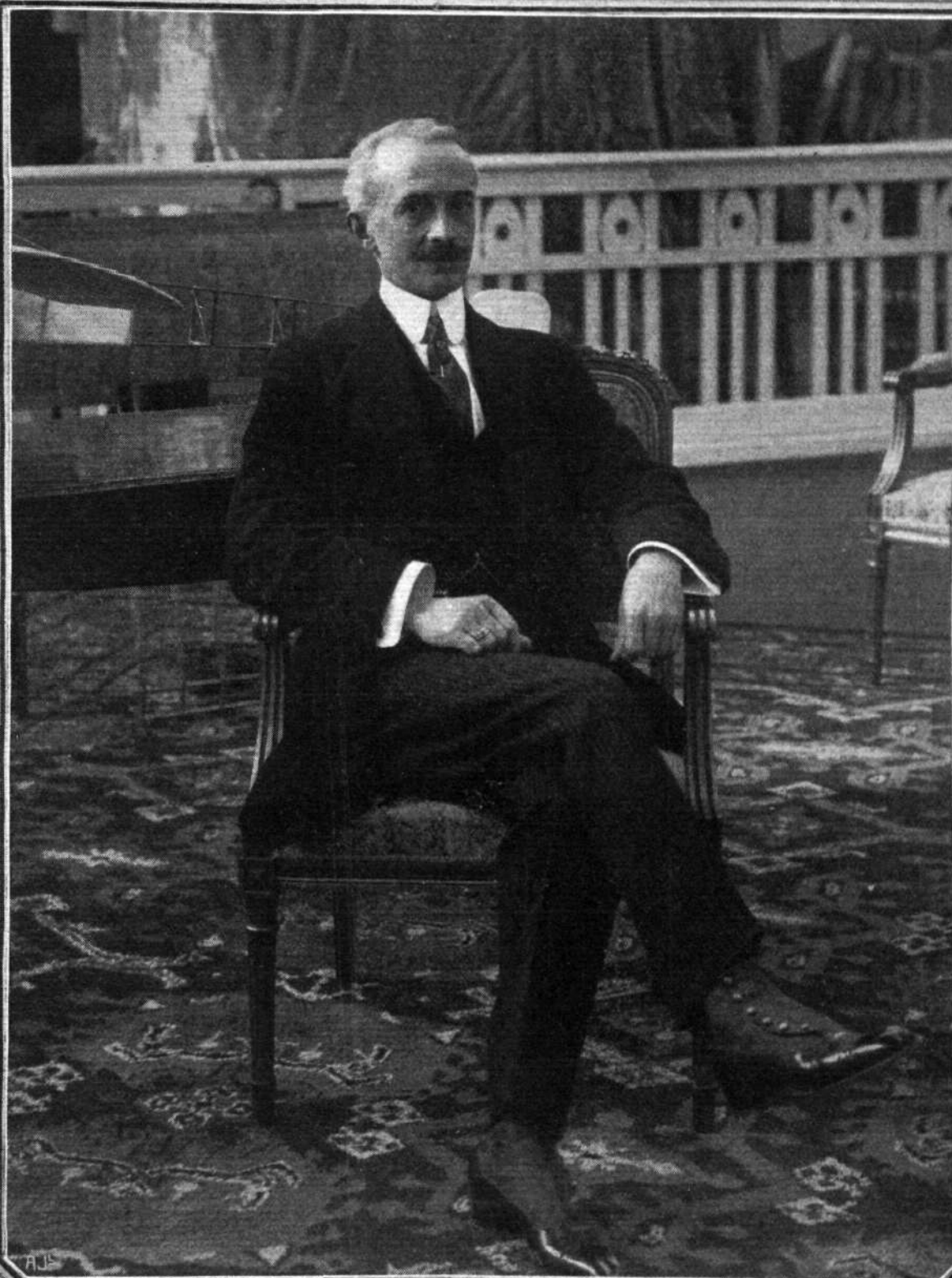
Since the first Channel crossing Mr. Chereau has been connected with many famous flights, and is well posted on all motor and aviation matters.

THE HAWK.



The roll call of the Transport Section of the R.F.C. at the Montrose depot at 4.30 a.m. on Sunday last week, in connection with the flight to the south.

MEN OF MOMENT IN THE WORLD OF FLIGHT

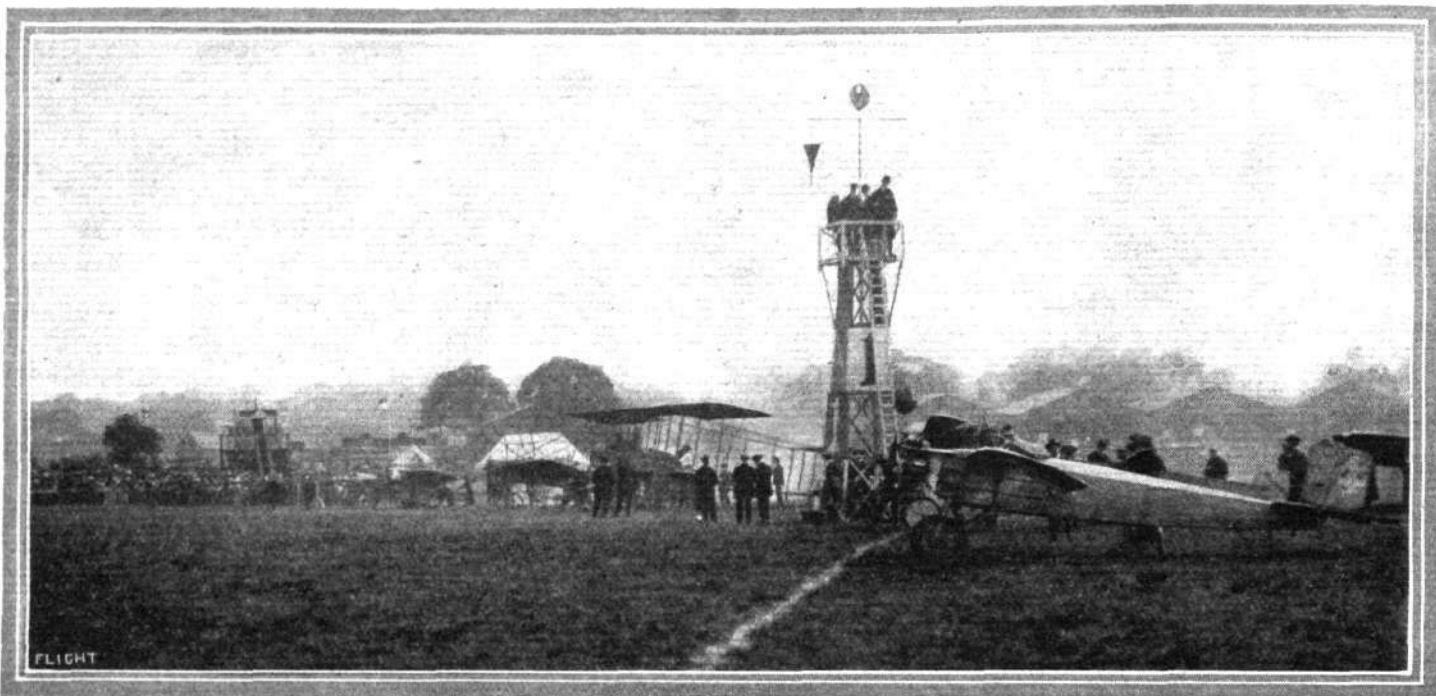


MR. NORBERT CHEREAU.

THE THIRD AERIAL DERBY.

TO-MORROW (Saturday) the Third Aerial Derby is to take place, starting from the London Aerodrome, Hendon, at 4.15 p.m. The prize for the race, which is open to the world, are the *Daily Mail* Gold Cup, and the "Shell" £250 prize for the fastest time, the

the prize. Mr. Sopwith, who was flying a 70 h.p. Blériot monoplane, completed the course in 1 hr. 23 m. 8½ s. Mr. Hamel, who was also flying a 70 h.p. Blériot, made the next best time, completing the course in 1 hr. 38 m. 46 s., whilst Mr. W. Moorhouse



THE FIRST AERIAL DERBY, JUNE 8TH, 1912.—The machines in line for the starting at the Hendon Aerodrome.

"Shell" Trophy and £100 for the winner of the sealed handicap, £75 for the second, and £25 for the third.

The first Aerial Derby, it will be remembered, took place on June 8th, 1912, and was flown over a course of 81 miles, starting from the London Aerodrome, Hendon. The turning points were: Kempton Park, Esher Station, Russell Hill, Purley, Purfleet, Epping and High Barnet. Out of the fifteen pilots entered for this race only seven started, and of these only four completed the course. Mr. T. O. M. Sopwith, who was the first man home, was at first disqualified owing to it having been wrongly reported that he had flown inside one of the control marks, but ultimately he was awarded

covered the distance of 81 miles in 2 h. 0 m. 22 s., on a 150 h.p. Radley-Moorhouse monoplane.

It will still be remembered that Mr. Maurice Guillaux, when he seemed to have the race in his hand, just failed to reach home on his little 45 h.p. Caudron monoplane through running out of petrol when in sight of the Hendon aerodrome.

The Second Aerial Derby, which was to have been held on June 14th, 1913, had to be postponed owing to the fact that the authorities had refused to grant exemption from the regulation concerning flying over prohibited areas. Ultimately, however, a committee, appointed by the Royal Aero Club, succeeded in



Sopwith on his Blériot, arriving back at the London Aerodrome on Saturday, June 8th, 1912, the winner of the First Aerial Derby.



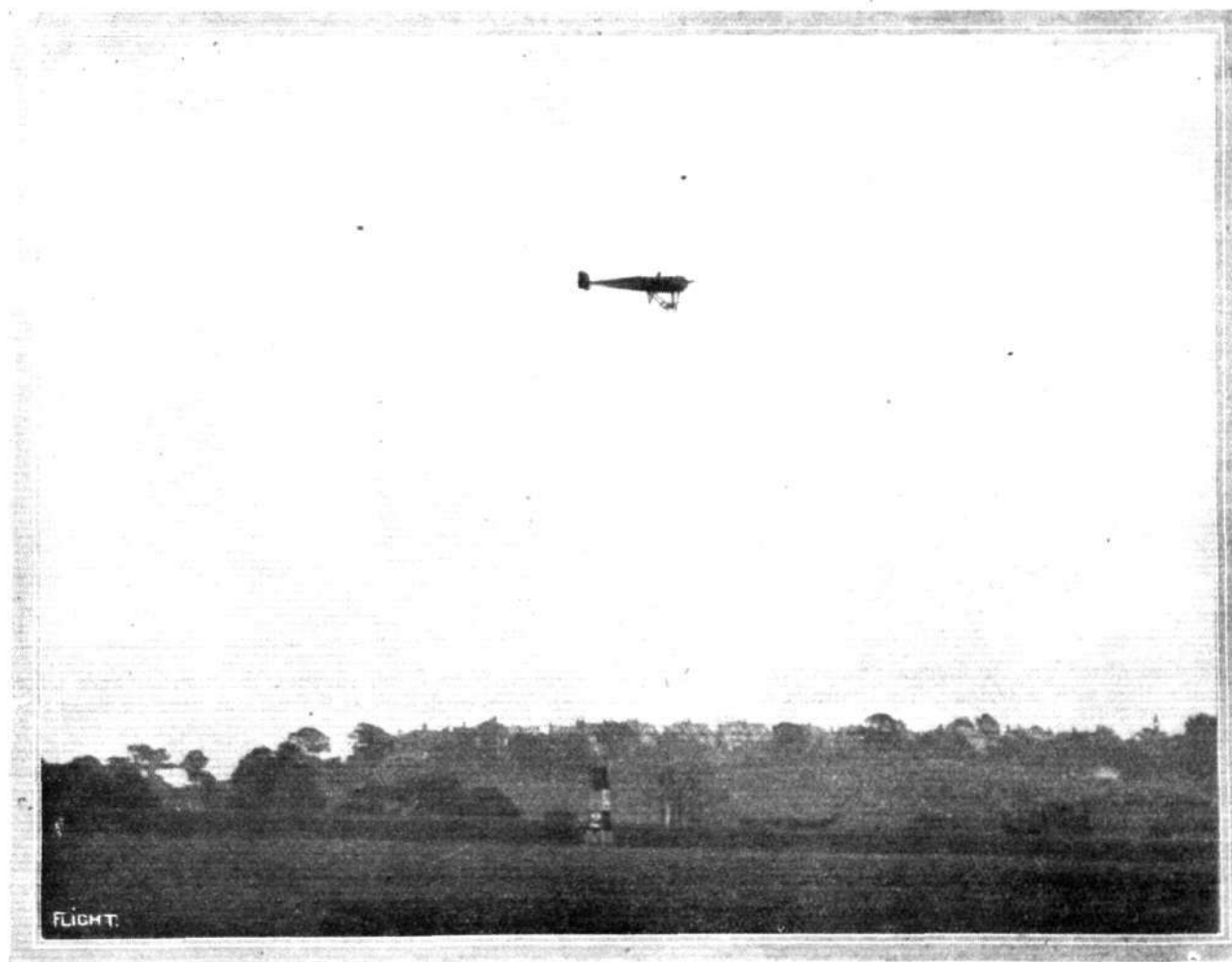
THE SECOND AERIAL DERBY, HENDON, SEPT. 20th, 1913.—View of the machines in line ready for the start.

obtaining the necessary permission, and the race was held on September 20th. The course was slightly different from that of the previous year, the turning points being: Kempton Park, Epsom Racecourse, West Thurrock, Epping, and Hertford. Out of the fifteen machines entered eleven started, whilst nine completed the course.

The race was won by Mr. Gustav Hamel on an 80 h.p. Morane-Saulnier monoplane. Mr. Hamel covered the distance of 94½ miles in 1 hr. 15 mins. 49 secs. Second was Mr. H. Barnwell on the

120 h.p. Martinsyde monoplane, who completed the course in 1 hr. 18 mins. 44 secs.; whilst Mr. H. Hawker, on an 80 h.p. Sopwith biplane, was third, his time being 1 hr. 25 mins. 24 secs.

A comparison of the speeds of the winners for the two years shows an increase from 58.5 miles per hour, which was the speed at which Mr. Sopwith covered the distance, to 75 miles per hour, as being the speed of Mr. Hamel's Morane. It should be understood, however, that these figures do not necessarily represent the actual flying speeds of the respective machines, since the degree of accuracy



Gustav Hamel finishing and winning the Second Aerial Derby at Hendon on Saturday, Sept. 20th, 1913, on his Morane-Saulnier monoplane.

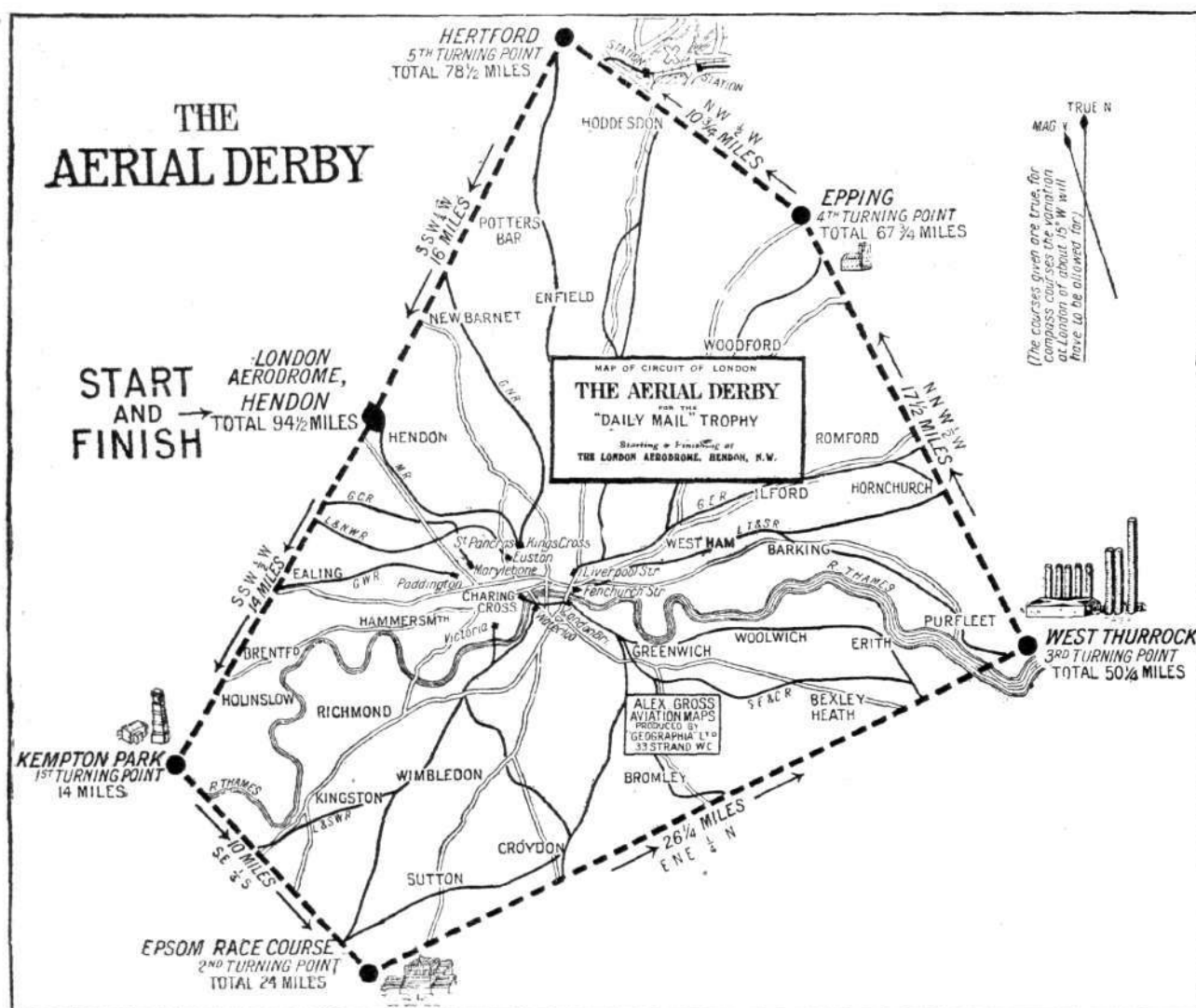
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THE THIRD AERIAL DERBY.—Table of Pilots, Machines, &c.

No.	Pilot.	Machine.	Type.	Engine.	No.	Pilot.	Machine.	Type.	Engine.
1	Dr. F. Hansen	G. Caudron	Bi.	35 Statax	12	Lord Carbery	B. Morane	Mono.	80 Le Rhone
2	R. H. Carr	B. Grahame-White	Bi.	50 Gnome	13	H. Blackburn	B. Avro	Bi.	80 Gnome
3	M. Zubiaga	Sp. Caudron	Bi.	60 Gnome	14	F. P. Raynham	B. Avro	Bi.	80 Gnome
4	P. Verrier	F. H. Farman	Bi.	80 Gnome	15	R. H. Barnwell	B. Vickers	Bi.	100 Gnome
5	J. Blatherwick	B. Martinsyde	Bi.	65 Antoinette	16	V. Waterfall	Martinsyde	Mono.	120 Austro-Daimler
6	L. A. Strange	B. Blériot	Mono.	80 Gnome	17	—	Morane	Mono.	80 Gnome
7	J. Alcock	B. M. Farman	Bi.	100 Sunbeam	18	H. Busteed	B. Bristol	Bi.	80 Gnome
8	W. R. Ding	B. Handley Page	Bi.	100 Anzani	19	—	Sopwith	Bi.	80 Gnome
9	S. V. Sippe	B. Bristol	Bi.	80 Gnome	20	H. Pixton	B. Sopwith	Bi.	100 Gnome
10	F. Goodden	B. Morane	Mono.	80 Gnome	21	Gustav Hamel	B. Morane	Mono.	160 Gnome
11	L. Noel	F. Grahame-White	Bi.	100 Gnome					
		or Morane	Mono.	80 Gnome					

B. = British.
G. = German.

F. = French.
Sp. = Spanish.



Sketch map of the circuit for the Third Aerial Derby on Saturday, May 23rd, showing the districts over which the competitors will be flying. The controls over which the competitors must pass at the various turning points are defined as follows:

KEMPTON PARK.—Turning point is square chimney, 230 ft. high, just north of Kempton Railway Station, very dark brown brick, with low building, filter beds and connecting reservoir. In the neighbourhood is a lower chimney (round) with two very large reservoirs.

EPSOM RACECOURSE.—Turning point is the Grand Stand which is at the top of Epsom Downs, making a conspicuous landmark.

WEST THURROCK.—Turning point is the cement works on north bank of the Thames near top of the bend three miles east of Purfleet and slightly to the east of West Thurrock Church. The works consist of a long rectangular buff-coloured building, with a large diagonal white cross on the roof. Five factory chimneys stand in line at equal distances behind the building, flanked by two taller chimneys and a very high one further to the right.

EPPING.—Turning point is Epping Church in centre of Epping village on west side of London Road. 200 yards south of church is a solitary water tower 120 feet high.

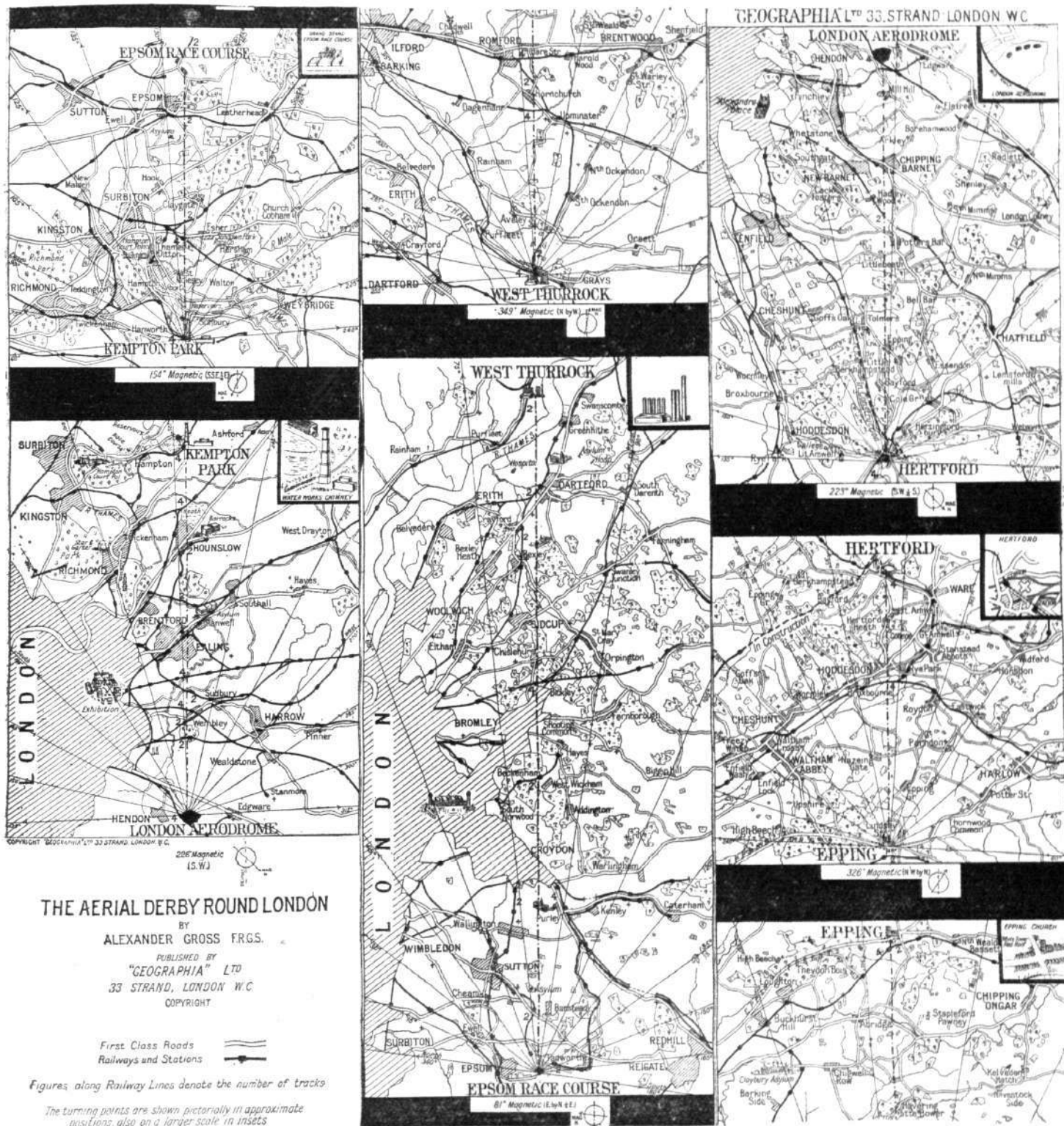
HERTFORD.—Turning point is the large field immediately north of the town adjoining the railway stations, and enclosed on the north, east and west by streams. The actual point will be marked by a large white cross.

with which the pilots follow the course, and the proximity at which they round the turning points, naturally affect the total time of the course. However great was the increase in speed from the race of 1912 to that of 1913, there is every possibility that this year's race will show an even greater increase in speed, for not only do several of the competitors know the course, which is the same as last year's, but nearly all of them have the added advantage of another year's flying experience. Besides, the machines of to-day are—taking it all round—a great deal faster than were those of a year ago, so that, given a clear day which will enable the competitors to follow the course fairly accurately, several of the entrants should reduce the time taken in covering the course to about an hour.

In addition to the *Daily Mail* Gold Cup and the Shell £250 for the fastest time, a Sealed Handicap for the Shell Trophy and a £100

prize will be run off in connection with the race, whilst the second and third men will receive £75 and £25 respectively. This Sealed Handicap will give a sporting chance to the slower machines.

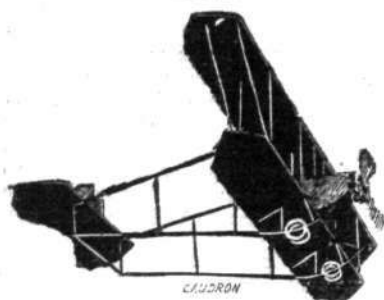
The accompanying list of pilots and machines, as well as the illustrations, are in accordance with the official entries for the race this year, but it is possible that at the last moment one or two pilots or individual machines may be changed. The sketch map of the course showing the different turning points and the reduced facsimile of the route map for the Aerial Derby as used by the various pilots should enable our readers to follow the event closely in their respective districts, whilst the silhouettes will facilitate identification of the machines as they will appear when flying overhead. In addition to these maps and silhouettes, we publish portraits of the pilots, as well as short illustrated descriptions of the various machines.



Reduced map as used by the Aviators competing in the Aerial Derby, showing each section distinctly. The original of the Map is about five feet six inches in length, on which the rivers, streams, lakes and reservoirs are coloured most conspicuously in blue, woods and parks in green. The Map is designed by Alexander Gross, F.R.G.S., and published by "Geographia," Ltd., 33, Strand, W.C.

THE PILOTS AND HOW TO RECOGNISE THE MACHINES.

No. 1.



Pilot :
Dr. F. Hansen.



No. 1. The 35 h.p. Caudron Biplane.

This machine is of the tractor type, but may be easily identified by the very short *nacelle* and by the tail booms, of which the lower ones are continued forward to form the skids.

No. 2. The 50 h.p. Grahame-White Tractor Biplane

may be recognised by the comparatively great gap between the main planes, and also by the small size of the tail planes. The *fuselage* is similar to that of the Morane monoplane.



No. 2.



Pilot :
Mr. R. H. Carr.

No. 3.



Pilot :
Mr. M. Zubiaga.



No. 3. The 60 h.p. Caudron Biplane

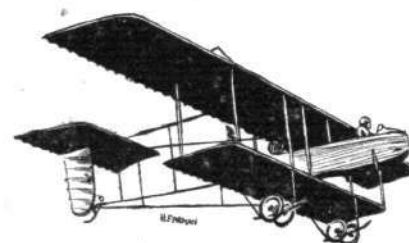
is somewhat similar to machine No. 1, but may be identified by means of its *nacelle*, which is differently shaped from that of the above-mentioned machine.

No. 4. The 80 h.p. Henry Farman Biplane

will be easily recognised by the *nacelle*, which projects out in front of the main planes, of which the upper one has a considerable overhang. This machine is of the engine-behind type.



No. 4.



Pilot :
Mr. P. Verrier.

THE PILOTS AND HOW TO RECOGNISE THE MACHINES.

No. 5. The 65 h.p. Martinsyde Biplane

looks somewhat similar to the Henry Farman biplane when in the air, but may be differentiated from the latter machine by means of its chassis, which has no skids, and by the different shape of its tail planes.



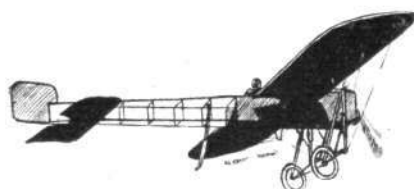
No. 5.



Pilot :

Mr. J. Blatherwick.

No. 6.



Pilot :

Mr. L. A. Strange.



No. 6. The 80 h.p. Blériot Monoplane

will be easily recognised, as it has rounded wing tips and differs from the other monoplanes entered in that the rear portion of the fuselage is left uncovered.

No. 7. The 100 h.p. M. Farman Biplane.

This machine will be readily recognised, as it is the only one in the race having a front elevator.



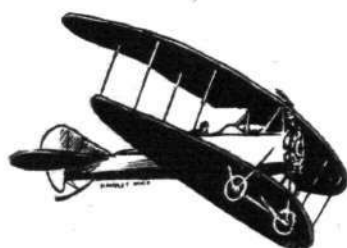
No. 7.



Pilot :

Mr. J. Alcock.

No. 8.



Pilot :

Mr. W. R. Ding.



No. 8. The 100 h.p. Handley Page Biplane

will be one of the easiest machines to identify, owing to the peculiar shape of its wings, which, as will be seen from the silhouette, are crescent-shaped.

THE PILOTS AND HOW TO RECOGNISE THE MACHINES.

No. 9.



Pilot :
Mr. S. V. Sippe.



No. 9. The 80 h.p. Bristol
Biplane

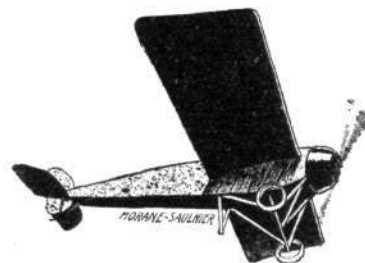
will be somewhat difficult to distinguish from machine No. 13, the Avro biplane, but may be identified by its peculiar four-wheeled chassis.

No. 10. The 80 h.p. Morane
Monoplane.

The best means for identification of this machine is its straight, angular wing tips and its landing chassis, which, as will be seen from the accompanying silhouette, has no skids.

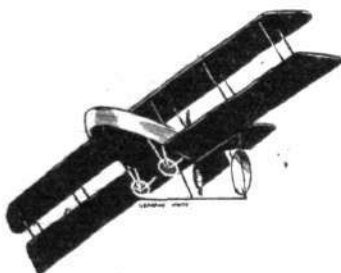


No. 10.



Pilot :
Mr. F. Goodden.

No. 11.



Pilot :
Mr. L. Noel.



No. 11. The 100 h.p. Grahame-
White Biplane.

This machine will be somewhat difficult to distinguish from the Henry Farman if flying at a great altitude, but differs from the latter in that its chassis has no skids.

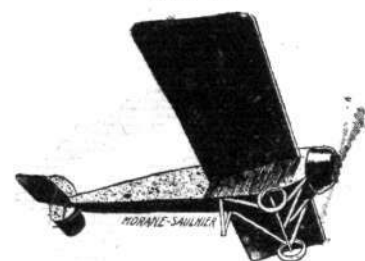
The 80 h.p. Morane Monoplane similar to No. 10.

No. 12. The 80 h.p. Morane
Monoplane

is similar to machine No. 10.



No. 12.



Pilot :
Lord Carbery.

THE PILOTS AND HOW TO RECOGNISE THE MACHINES.

No. 13. The 80 h.p. Avro Biplane is of the tractor type, and has an all-enclosed *fuselage*. It may be recognised by its chassis, which has a single central skid and two wheels.



No. 13.



Pilot:
Mr. H. Blackburn.

No. 14.



Pilot:
Mr. F. P. Raynham.



No. 14. The 80 h.p. Avro Scout. This machine will be easily recognised from the shape of its wings, which slope backwards so as to form a V.

No. 15. The 100 h.p. Vickers Biplane

is a small, fast tractor machine which will be a little difficult to distinguish from the Bristol machine No. 18. However, it has a considerably deeper and wider *fuselage* than has the Bristol.

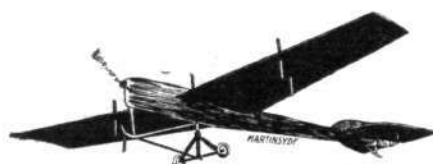


No. 15.



Pilot:
Mr. R. H. Barnwell.

No. 16.



Pilot:
Mr. V. Waterfall.

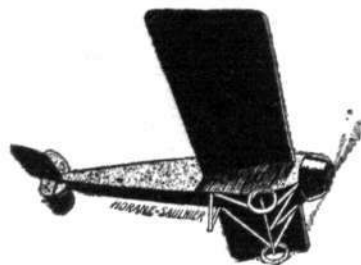


No. 16. The 120 h.p. Martinsyde Monoplane.

This machine is easily distinguished from the other monoplanes entered by its tapering wings, which are set at a dihedral angle and by its long narrow *fuselage*.

THE PILOTS AND HOW TO RECOGNISE THE MACHINES.

No. 17.



Pilot :
Not announced.

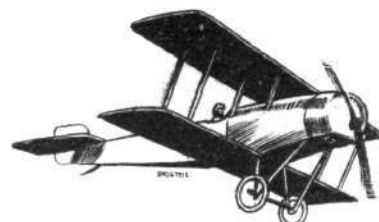
No. 17. The 80 h.p. Morane Monoplane
is exactly similar to Nos. 10 and 12.

No. 18. The 80 h.p. Bristol Biplane,

as has already been explained, will look, when flying at a height, somewhat similar to the Vickers biplane, but may be identified by its narrower fuselage.

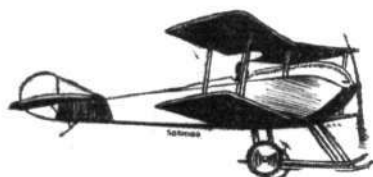


No. 18.



Pilot :
Mr. H. Busteed.

No. 19.



Pilot :
Not announced.

No. 19. The 80 h.p. Sopwith is a small fast machine, somewhat similar to the Vickers and Bristol, but has a wider and deeper fuselage, and may be identified by its chassis, which differs from that of the two above-mentioned machines in that two skids are fitted.

No. 20. The 100 h.p. Sopwith Biplane

is similar in outward appearance to No. 19, from which it differs only in engine power.

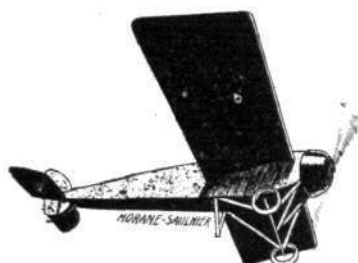


No. 20.



Pilot :
Mr. H. Pixton.

No. 21.



Pilot:
Mr. Gustav Hamel.



No. 21. The 80 or 160 h.p.
Morane Monoplane

will be similar in outward appearance to the other Moranes entered.

THE MACHINES AND HOW TO RECOGNISE THEM.



The 35 h.p. Caudron Biplane (No. 1).

No. 1. The 35 h.p. Caudron Biplane.—This machine is a standard type Caudron biplane, already familiar to our readers through descriptions in FLIGHT. The only alteration is that a different type *nacelle* has been fitted in order to accommodate the 35 h.p. Statax engine. Great interest will attach to the performance of this machine, since it is the first public appearance of the Statax engine. It will be remembered that a small engine of this type was exhibited at the last Olympia Aero Show, when it was described in these columns.



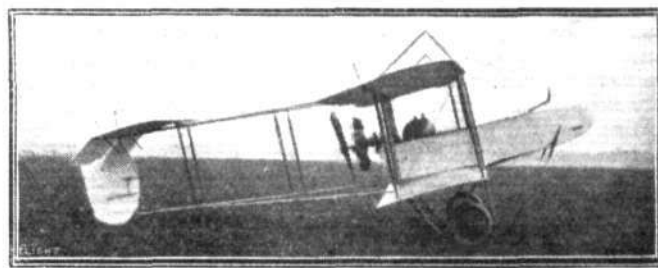
The Grahame-White Tractor Biplane (No. 2).

No. 2. The 50 h.p. Grahame-White Biplane is the machine which is familiar to our readers under the pet name "Lizzie." It is on this machine that Mr. R. H. Carr has for the past few weeks been giving such successful demonstrations of looping the loop.



The 60 h.p. Caudron Biplane (No. 3).

No. 3. The 60 h.p. Caudron Biplane is similar in its general arrangement to the Statax engined Caudron, with the exception that it has a standard type *nacelle*. The engine, a 60 h.p. Gnome, is partly enclosed in the usual way by an aluminium shield.



The Henry Farman Biplane (No. 4).

No. 4. The 80 h.p. Henry Farman Biplane is a standard type Henry Farman. It was on a similar machine that M. P. Verrier recently flew from Hendon to Monaco. The engine, as our readers are, of course, aware, is mounted in the rear of the *nacelle*, thus constituting this machine to be of the "pusher" type.

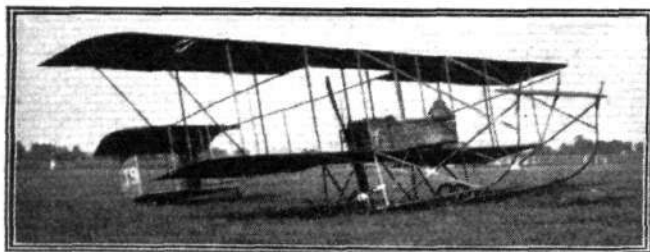
No. 5. The 65 h.p. Martinsyde Biplane.—Although this machine follows more or less standard practice as regards its general arrangement, its performance will be watched with interest, since it is the first time that it appears in public. It is built of steel practically throughout, with the exception of the wings and the engine bearers. The engine used is a 65 h.p. Antoinette, mounted in the rear of the *nacelle*.



The Blériot Monoplane (No. 6).

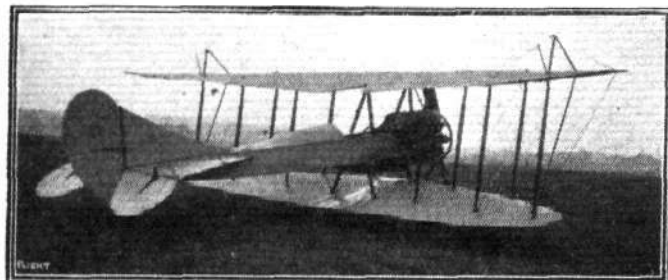
No. 6. The 80 h.p. Blériot two-seater is already so well known as to need little description here. The pilot's and the passenger's seats, it will be remembered, are arranged tandem fashion, the passenger occupying the rear seat, just behind the trailing edge of the wings, from where he obtains an excellent view of the country beneath.

No. 7. The 100 h.p. Maurice Farman Biplane is the identical machine on which Mr. Jack Alcock has been doing such a great amount of excellent flying during the past months. Instead of the 70 h.p. Renault engine usually fitted on the Maurice Farman biplane, this machine is equipped with a 100 h.p. Sunbeam engine, which of course increases its speed considerably.



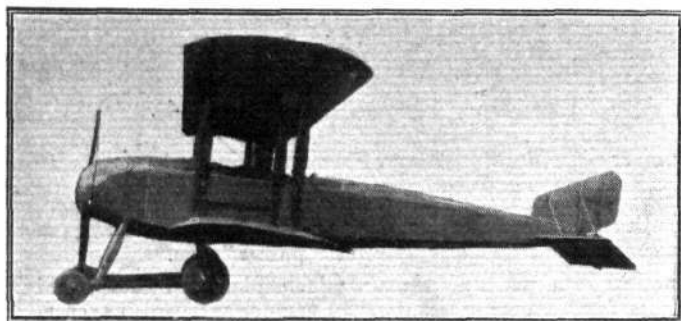
The Maurice Farman Biplane (No. 7).

No. 8. The 100 h.p. Handley Page Biplane is the same machine on which Mr. E. R. Whitehouse, and later Mr. W. R. Ding, have been doing such good flights. Some time ago, it will



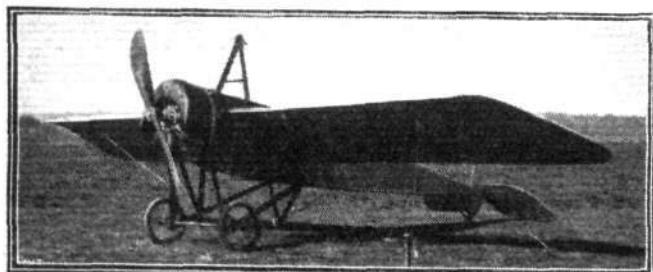
The Handley Page Biplane (No. 8).

be remembered, Mr. Ding damaged the chassis of this machine on landing. The new chassis fitted is of a different type, consisting of two pairs of V struts, from which is slung the single tubular axle. A very effective silencer has been fitted to the 100 h.p. Anzani engine, so that the machine cannot be heard when flying at an altitude of a few hundred feet.



The Bristol Two-seater Biplane (No. 9).

No. 9. The 80 h.p. Bristol Biplane is a standard Bristol tractor machine, and is similar to the machines exhibited at the last Paris and Olympia Aero Shows. Although these machines have done a great amount of flying in the west of England, and on Salisbury Plain, they are not so well known to Londoners as they deserve to be, and should, therefore, be watched with interest by those of our readers who will watch the Aerial Derby, either from the starting place at Hendon Aerodrome or from one of the turning points.



The Morane Monoplane (Nos. 10, 12, 17, 21).

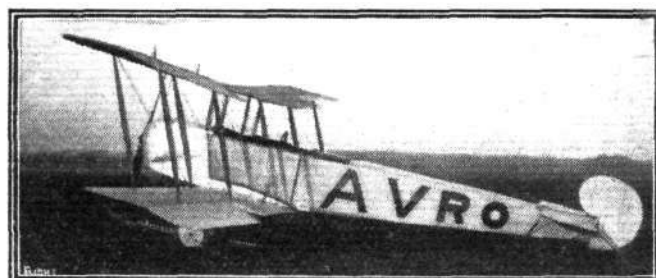
£ Nos. 10, 12, 17 and 21. The Morane-Saulnier Monoplanes are similar to the machines flown so successfully by Hamel, Noel and the late M. Marty, to mention just a few of the pilots who favour

this machine. As scale drawings and a detailed description of the Morane-Saulnier monoplane have already appeared in the columns of FLIGHT, it is unnecessary to describe the machines in detail here. Suffice it to say that they are very fast, and as at least three of them are equipped with 80 h.p. engines, they should be particularly well matched. There is a possibility that Mr. Hamel will be using a 160 h.p. Gnome in his Morane, but failing to obtain this engine in time for the race, he will in all probability use the ordinary 80 h.p. type.



The Grahame-White Military Biplane (No. 11).

No. 11. The 100 h.p. Grahame-White Military Biplane is the machine exhibited at the last Olympia Aero Show. As it has not yet been thoroughly tried, there is the possibility that Mr. Louis Noel will change this machine at the last moment for an 80 h.p. Morane, in which case the total number of Moranes flying in the race will be five. The military biplane is mainly characteristic on account of the main planes, of which the outer portion is slightly swept back. The nacelle is also of a somewhat peculiar shape, being, so to speak, of streamline form flying with the pointed end foremost. The engine, a 100 h.p. Gnome, *monosoupape*, is totally enclosed by an aluminium shield. The landing chassis is of a simpler type than one usually finds in biplanes of the "pusher" type, and is somewhat similar to the chassis of the Morane-Saulnier monoplane.



The Avro Biplane (No. 13).

No. 13. The 80 h.p. Avro Biplane is very similar to the machine on which Mr. F. P. Raynham did his famous glide from Brooklands to Hendon. This machine is very fast and possesses a good speed range. The engine, which is mounted in the nose of the fuselage, is totally enclosed by an aluminium shield.

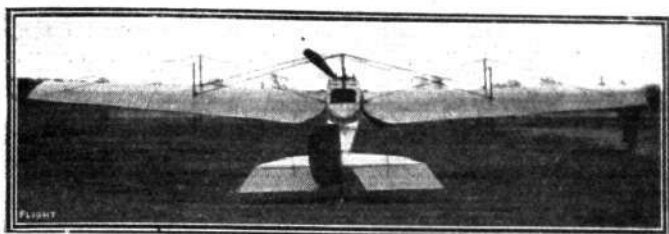


The Avro Scouting Biplane (No. 14).

No. 14. The 80 h.p. Avro Scouting Biplane was, it will be remembered, exhibited at the last Olympia Aero Show. It is mainly characteristic on account of its main planes, which slope

backwards so as to form a V, as seen in plan. This machine, which was fitted at the time of the Show with air-brakes for the purpose of reducing the speed when landing, is expected to be very fast, as the angle of incidence is very small and the planes are perfectly flat on the under surface.

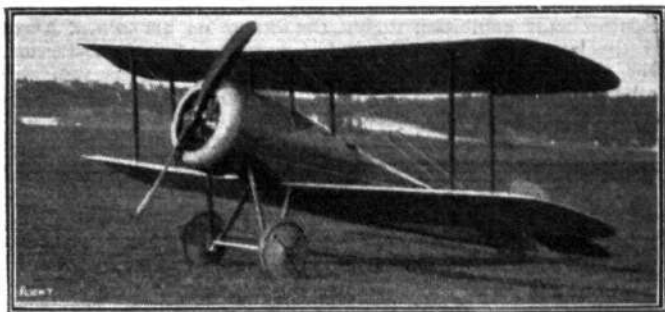
No. 15. The 100 h.p. Vickers Biplane was also exhibited at the last Olympia Aero Show, and belongs to the small fast scouting type tractor biplane class. As this machine has not been flown in public up to the time of going to press, the speed is not known, but it is anticipated that the machine will prove very fast indeed.



The Martinsyde Monoplane (No. 16).

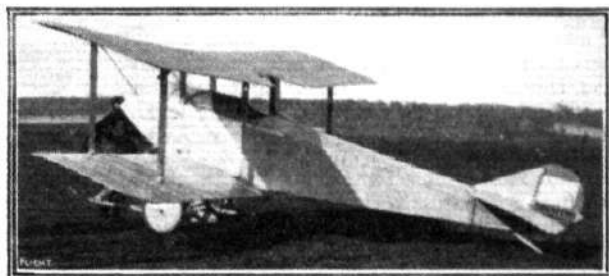
No. 16. The 120 h.p. Martinsyde Monoplane differs in minor details only from the machine flown by Mr. R. H. Barnwell in last year's Aerial Derby, when, it will be remembered, Mr. Barnwell obtained second place, so that this machine should, barring mishaps, be in the first batch home. It is equipped with a 120 h.p. Austro-Daimler engine.

No. 18. The 80 h.p. Bristol Biplane is similar to the machine exhibited at the last Olympia Aero Show, on which some time ago Mr. Busteed flew from Salisbury Plain to Brooklands in 27 mins., and as this new machine is, if anything, faster than the old one, it should stand an excellent chance of being one of the first to finish the course.



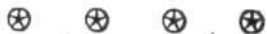
The Bristol Scout (No. 18).

Nos. 19 and 20. The Sopwith Biplanes, of which one is fitted with an 80 h.p. engine, whilst the other has a 100 h.p. motor, are



The Sopwith Scout (Nos. 19 and 20).

very similar to the biplane on which Mr. Pixton won the Schneider race at Monaco recently, with the exception, of course, that it is fitted with a land chassis. As these small Sopwith biplanes are very fast indeed, they should provide a very close race with some of the other really fast machines entered.



FLYING AT HENDON.

A QUICK-STARTING contest was the principal event at Hendon on Thursday afternoon of last week, in addition to which there were numerous exhibition and passenger flights. Proceedings opened shortly after 3 o'clock with flights by N. Howarth and W. Birchenough on Grahame-White 'buses, and Louis Noel on the 80 h.p. Blériot with passengers. R. J. Lillywhite took up a rather weighty passenger (about 16 stone) on the bi-rudder 'bus, with the result that the passenger's seat collapsed, and had to be mended before further passengers could be taken up. R. H. Carr then ascended on the 100 h.p. G.-W. aerobus with Claude Grahame-White and two lady friends as passengers, and a little later F. W. Goodden made his first public appearance on the 80 h.p. Morane-Saulnier monoplane. His flight, which lasted about 20 mins., was a splendid example of a fine combination of man and machine. The latter has just been turned out at the G.-W. works, and is certainly an excellent job. Noel informed the writer that this new "80" is much nicer to fly than the previous ones, being exceedingly easy on the controls. As for Goodden, he flew the machine as if he had been flying it all his life, and his landing—a decidedly tricky matter on this type of machine—was very neat. In the meanwhile, Carr made another ascent on the aerobus, taking as passengers two members of the St. John Ambulance Corps and two pilots, A. E. Barrs and Chas. Weber, the latter taking some photographs when aloft. By this time the passenger's seat on the bi-rudder 'bus had been mended, and Lillywhite got to work again, whilst E. Norris made a flight on 'bus 109. Carr then took up three passengers on the aerobus, and Goodden took up his first passenger on the Morane-Saulnier. The quick-starting contest then took place. Each competitor was allowed two tries, the first with his engine running slow at the start, and the second with the engine "all out." The former starts were made opposite the sixpenny enclosure, and the latter opposite the judge's box. The results were as follows:—

	1st	2nd	Ave-
	Attempt.	Attempt.	rage.
	ft. in.	ft. in.	ft. in.
1. R. H. Carr (50 h.p. G.-W. 'bus) ..	161 4	94 0	122 8
2. R. J. Lillywhite (50 h.p. G.-W. 'bus)	178 6	96 3	137 4½
3. Louis Noel (50 h.p. G.-W. 'bus) ...	171 0	115 3	143 1½
4. W. Birchenough (50 h.p. G.-W. 'bus)	193 0	128 0	160 6
5. N. Howarth (50 h.p. G.-W. 'bus) ...	215 0	128 0	171 6

1912.

Mr. T. O. M. Sopwith, the winner of the first Aerial Derby, June 8th, 1912.



1913.

Mr. Gustav Hamel, the winner of the second Aerial Derby, September 20th, 1913.

Whilst the above contest was in progress, J. L. Hall and Marcel Desoutter made exhibition flights, the former on his 50 h.p. Avro, and the latter on Lord Edward Grosvenor's 50 h.p. Blériot. After the contest M. Osipenko made a flight on 'bus 109, and Birchenough took up a passenger on the bi-rudder 'bus, the machines then being returned to the hangars. Later in the evening, however, M. Zubiaga came out on his 60 h.p. Gnome-Caudron, and Louis Noel made a 10-minute flight on the 100 h.p. G.-W. Military biplane with Norris as passenger. The angle of incidence of the tail had been altered since the trial flights the previous Saturday, and a marked improvement was noticed in the flying.

The elements appear to be determined not to let anyone win the Shell Trophy, which was put up for competition last March, for once again the wind was too strong to permit this event being flown on Saturday afternoon last at the Second Summer Meeting at Hendon. It did not, however, prevent numerous exhibition and passenger flights from being made. At 3.30 p.m., R. H. Carr brought out the G.-W. tractor biplane "Lizzie," which had been thoroughly overhauled, but in spite of which it did not appear to be as lively as it used to be. Louis Noel then made a couple of passenger flights on the 80 h.p. Blériot, and Marcel Desoutter put up a 6-min. flight on Lord Edward Grosvenor's 50 h.p. Blériot, whilst J. L. Hall came out shortly after on his 50 h.p. Avro. Carr next ascended once more on "Lizzie," and made two loops, each at an altitude of about 1,000 ft. After this Noel made four passenger flights on the Blériot, taking with him on one occasion Dr. A. Evans, of Charing Cross Hospital, and flights were also made by Hall on the Avro and F. W. Goodden on the 80 h.p. Morane-Saulnier. Goodden remained aloft for half an hour, climbing several thousand feet. Whilst he was flying Carr took up a passenger on the Blériot, and Lillywhite made a 10-minute flight on the bi-rudder 'bus. Shortly after 5.30 p.m. Desoutter left for Brooklands on the 50 Blériot, the journey taking him about 15 mins., although we did not learn of his safe arrival until several hours later. Carr then made a couple of passenger flights on the Blériot, and Lan Davis flew his 50 h.p. Avro. Carr gave another looping display on "Lizzie," making in all three loops at altitudes varying from 800 to 1,000 ft. Noel and Goodden each took up a passenger, and two more flights by Lan Davis on the Avro brought the proceedings to a close. At 7.40 p.m. Hamel arrived on his 80 h.p. Morane with Lady Duff as passenger.



An important personage at Hendon Aerodrome—the megaphone man.

He had left Brooklands in the morning for Reading, and from there he went on to Oxford, where he witnessed a polo match and gave a looping display. He then returned to Reading, and was received by the Lord Chief Justice, Lord Reading, after which he continued on to Hendon.

Sunday afternoon was an exceptionally busy one, and the large attendance of visitors saw plenty of flying. The proceedings opened with a looping display by R. H. Carr on "Lizzie," and exhibition and passenger flights by Birchenough on the bi-rudder 'bus, Goodden on the 80 h.p. Morane-Saulnier, Noel on the 80 h.p. Blériot, and Carr on the aerobus. Lady passengers were very much in evidence during the afternoon, the greater number of whom were taken up by Noel on the Blériot. Goodden made several flights on the Morane-Saulnier, with and without passengers, and Lillywhite also made about four flights on the bi-rudder 'bus with passengers, at one time flying high and descending with a fine spiral. Carr gave a second looping demonstration later in the afternoon, and also took up three passengers on the aerobus; Claude Grahame-White made a flight in the same machine with three passengers shortly after. Other flyers were Lan Davis on the 50 h.p. Avro, E. F. Norris and M. Osipenko on 'bus 109, N. Howarth on the bi-rudder 'bus, and M. Zubiaga on the 60 h.p. Caudron. Later in the evening Carr made a high flight on the aerobus with four passengers, and E. Baumann made a fine flight on the 100 h.p. Handley Page biplane. This machine has been fitted with a new and stronger chassis, consisting of two pairs of V struts of steel tube streamlined with wood, and another new feature is

the fitting of a silencer to the engine. Baumann flew for half an hour, reaching an altitude of 6,000 ft., the machine flying very steadily and the engine being remarkably silent. After landing, Baumann handed the machine over to W. R. Ding, who made several circuits.

THE KING AND THE R.F.C.

THE very real interest which is taken by H.M. the King in the work of the Royal Flying Corps was again strikingly evidenced on Tuesday last, when a whole afternoon was spent in inspecting the equipment and personnel of the corps at the Aircraft Park, Farnborough. As their Majesties left the Royal Pavilion two machines were manoeuvring overhead, and while from one a message was sent by wireless telegraphy that the Royal party was on its way, from the other several photographs were taken. The King rode across the common and Laffan's Plain, while the Queen and Princess Mary made their way by motor car. At the Aircraft Park, where the Royal Party was received by Brigadier-General Henderson (Director General of Military Aeronautics), and Lieut.-Col. F. H. Sykes, commanding the Military Wing R.F.C., twenty-seven machines of various types, each with pilot and attendant mechanics, were ranged in two rows, and after they had been inspected, each one in regular rotation made a circular flight of about five miles. While the inspection was in progress the King was shown several of the photographs, which had been secured from mid-air, of his ride across the common, the prints being shown to His Majesty fourteen minutes after the machine landed. A demonstration of

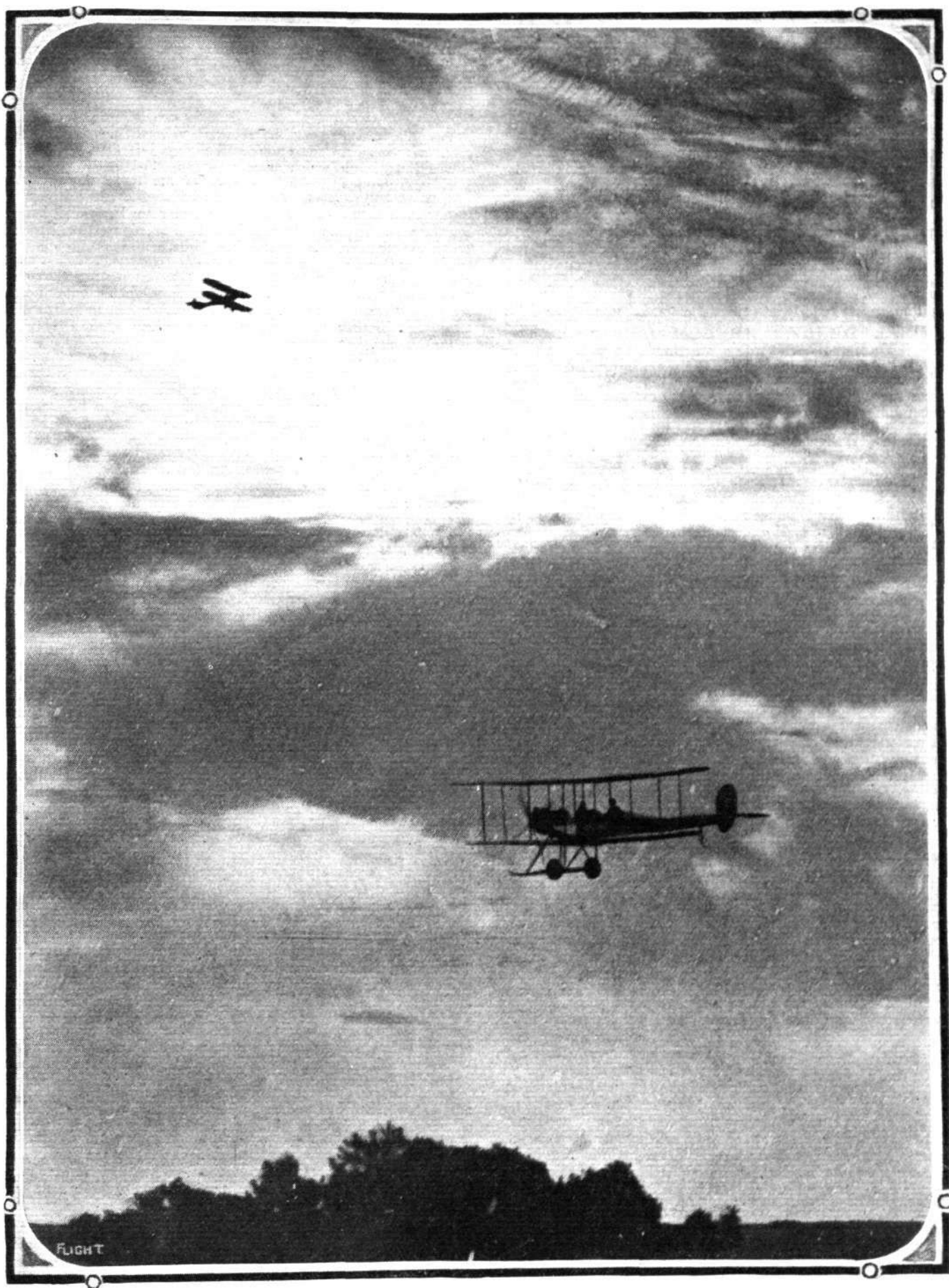
wireless telegraphy from and to an aeroplane in the air was also witnessed by the Royal party. The R.F.C. recruits under training were inspected and then a move was made to the airship sheds, where their Majesties were received by Capt. Sueter (Director of the Naval Air Department) and Com. E. A. D. Masterman (Commanding Naval Wing R.F.C.). After examining the details of the dirigibles, the "Parseval," officially known as No. 4, was brought out and made a cruise of 12 miles or so, the eleven passengers on board including Lord John Hamilton, a member of the King's suite.

Then the Royal party was conducted through the workshops of the Royal Aircraft Factory by the superintendent, Mr. Mervyn O'Gorman, great interest being taken by His Majesty not only in the processes of construction but also in the arrangements at the factory for the testing of both aeroplanes and engines. Subsequently Major Clive Wigram, one of the King's private secretaries, went for a flight of about a dozen miles on one of the new R.E. biplanes, and during the trip the machine flew for some distance without the pilot touching the controls. The King returned to the Royal Pavilion about 6 p.m.

The Atlantic Flight.

PARTICULARS of Mr. Gastav Hamel's proposed attempt to cross the Atlantic, starting from Newfoundland, are now available for publication. The machine which he will use is the new large Martinsyde monoplane to which reference was made in the columns of FLIGHT some time ago, when we were not at liberty to state the purpose for which this machine was being built. In its general lines, the new Martinsyde monoplane resembles previous machines of that make, excepting, of course, that it is of much greater dimen-

sions, the span being about 65 ft. and the overall length about 45 ft. The engine to be used will be a 215 h.p. Sunbeam. No floats will be fitted, but two bulkheads in the fuselage, in addition to the main planes, will keep the machine afloat should it have to come down on the sea, whilst a telescopic "distress" mast will be carried, for signalling use under such an emergency. This practical attempt has been made possible by the generous financial backing of that well-known sportsman, Mr. Mackay Edgar, who has done so much to uphold British supremacy in motor boating.



The start for the South of the R.F.C. No. 2 Squadron, Montrose, at 5.30 a.m.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Diary of Events.

May 23 ...	Aerial Derby.	Hendon Aerodrome.
June 10 ...	Balloon Race.	Hurlingham Club, Fulham, S.W.
June 27 ...	Balloon Race.	Hurlingham Club, Fulham, S.W.
July 11 ...	International Correspondence Schools Race.	London-Paris-London. Hendon Aerodrome.
July 11 ...	Balloon Race.	Hurlingham Club, Fulham, S.W.
Aug. 1-15	Daily Mail £5,000 Circuit of Britain Race. Starting from Southampton Water.	
Aug. 22-29	Gordon-Bennett Eliminating Trials.	Salisbury Plain.
Sept. 20-29	Gordon-Bennett Aviation Race.	Buc, France.

AERIAL DERBY. HENDON AERODROME.

To-morrow, Saturday, starting 4.15 p.m.

Members of the Royal Aero Club are admitted free to the Hendon Aerodrome on presentation of their Club Membership Cards. The Membership Card admits the Member only, motor cars must be paid for.

Balloon Contests at Hurlingham.

The Club has arranged the following Balloon Contests from Hurlingham Club, Fulham, for this year:—

June 10th... Hare and Hounds Race for Cup presented by Mr. John Dunville.

June 27th... Long Distance Balloon Race for Cup presented by Mr. A. Mortimer Singer.

July 11th... Hedges Butler Challenge Cup.

Members are admitted free to Hurlingham on the above dates, on production of their Club Membership Cards.

Daily Mail Circuit of Britain Race, £5,000.

Date of Contest ... August 1st to 15th.

Starting Place ... Southampton.

Entries.—The Entrance Fee is £100 per aircraft, and entries will be received up to 12 o'clock noon, May 30th, 1914. The Entrance Fee of £100 is payable either in one sum or as follows:—

£50 by noon on May 30th, 1914.

£50 by noon on June 20th, 1914.

Late entries will be received up to 12 noon, June 30th, 1914, in which case the Entry Fee will be £150.

The Entry Form, which must be accompanied by the Entrance Fee, must be sent in to the Secretary, Royal Aero Club, 166, Piccadilly, London, W.

Full particulars can be obtained from the Secretary, Royal Aero Club, 166, Piccadilly, London, W.

International Correspondence Schools Race.

London-Paris-London.

(Under the Competition Rules of the Royal Aero Club.)

Organised by the Royal Aero Club and the Aero-Club de France.

Starting and finishing at the Hendon Aerodrome,
Hendon, N.W.

SATURDAY, JULY 11TH, 1914.

PRIZES.

Fastest Time... 1st Prize: £500. Presented by the International Correspondence Schools.

Handicap ... 1st Prize: £300. Presented by the Royal Aero Club.

2nd Prize: £150. Presented by the International Correspondence Schools.

3rd Prize: £50. Presented by the International Correspondence Schools.

REGULATIONS.

1. *Date of Contest*.—The Race will start from the London Aerodrome, Hendon, on Saturday, July 11th, 1914, and competitors will leave the starting line in the order of their respective handicap times, the limit man starting at 5 a.m.

2. *Qualification of Competitors*.—Both the entrant and pilot must be duly entered on the Competitors' Register of the Royal Aero Club. Pilots must hold an aviator's certificate issued by the Royal Aero Club or other Club affiliated to the International Aeronautical Federation.

3. *Entries*.—The Entrance Fee is £5 per aircraft, and entries will be received up till 12 noon, Saturday, June 27th, 1914. Late entries will be received up to 12 noon, Saturday, July 4th, 1914, in which case the Entrance Fee will be £10.

The Entrance Fee will be returned to each competitor who completes the course by 10 p.m. on Saturday, July 11th, 1914.

The Entry Form, which must be accompanied by the Entrance Fee, must be sent to the Secretary of the Royal Aero Club, 166, Piccadilly, London, W.

4. *Course*.—The Course is from London to Paris and back, starting from the London Aerodrome, Hendon, *via* Harrow, Epsom and Boulogne to Buc Aerodrome, near Paris, and the return journey is from the Buc Aerodrome, near Paris, *via* Folkestone, Epsom and Harrow to the London Aerodrome, Hendon. In passing Harrow, Epsom and Boulogne on the outward journey and Folkestone, Epsom and Harrow on the home journey, competitors must fly sufficiently low for their numbers to be easily verified by the Observers at these points.

Should no competitor have completed the course by 10 p.m. on Saturday, July 11th, 1914, the Royal Aero Club reserve to themselves the right to extend the period or declare the race off.

5. *Order of Starting*.—Competitors will be started at their respective handicap times. Each aircraft will be allotted a number, which must be conspicuously displayed under the wings or planes of the aircraft in a position approved by the Officials.

6. *Starting*.—Each competitor, with his aircraft, must be on the starting line ready to start fifteen minutes before his time of starting.

7. *Timing*.—Competitors will be timed from the given order to start from the London Aerodrome until their return thereto, crossing the finishing line in flight. The winner of the Prize of £500 shall be the entrant of the competitor who shall have properly completed the course in the fastest time. The winners of the Handicap Prizes shall be the entrants of the competitors who shall have properly completed the course in the fastest respective handicap times.

8. *Arrival in Paris*.—Competitors will be required to make a compulsory stop of one hour at the Buc Aerodrome. The time of arrival of each competitor will be taken at the moment of alighting within the boundary of the Aerodrome. This stop of one hour may be utilised for replenishments and such repairs as are allowed. On the return journey competitors will be officially restarted at the expiration of one hour from the time of their alighting. Any time spent in the Aerodrome beyond the one hour will count as flying time.

9. *Repairs*.—Individual replacements and repairs to the aircraft and motor may be made *en route* or at Buc Aerodrome, but neither may be changed as a whole.

10. *Handicapping*.—The handicapping will be carried out by the handicappers appointed by the Royal Aero Club. In order to assist the handicappers, each competitor will be required to make speed tests over a measured course. The number of tests will be at the discretion of the handicappers, and these speed tests will be carried out on the day preceding the race as follows:—

Competitors must have their aircraft completely erected at the London Aerodrome, Hendon, N.W., not later than 10 a.m., on Friday, July 10th, 1914, and the pilot and aircraft must be at the disposal of the Officials at and from that hour until 6 p.m. for such Speed Tests. After the tests have been completed, no alterations or adjustments to any part of the aircraft may be made except with the permission of the Officials. This shall not be taken to include general adjustments of the motor.

Any competitor not complying with these regulations will render himself liable to disqualification, unless he has first received from the handicappers a certificate exempting him from such speed tests.

11. *Stoppages en route* are not prohibited.

12. *Shed Accommodation*.—The aircraft of competitors who are not already tenants at the London Aerodrome will be housed free of charge from 9 a.m. on Thursday, July 9th, 1914, till 6 p.m. on Monday, July 13th, 1914.

13. Competitors must be equipped with life belts or other appliances for keeping themselves afloat.

GENERAL.

1. A competitor by entering thereby agrees that he is bound by the regulations herein contained, or to be hereafter issued in connection with this competition, and by The Royal Aero Club Open Competition Rules.

2. The interpretation of these regulations or of any to be hereafter issued shall rest entirely with the Royal Aero Club.

3. The competitor shall be solely responsible to the officials for the due observance of these regulations, and shall be the person

with whom the officials will deal in respect thereof, or of any other question arising out of this competition.

4. A competitor by entering waives any right of action against the Royal Aero Club, the International Correspondence Schools, Limited, or the Grahame-White Aviation Company, Limited, for any damages sustained by him in consequence of any act or omission on the part of the officials of the Royal Aero Club, the International Correspondence Schools, Limited, or the Grahame-White Aviation Company, Limited, or their representatives or servants or any fellow competitor.

5. The aeroplane shall at all times be at the risk in all respects of the entrant and/or the competitor, who shall be deemed by entry to agree to waive all claim for injury either to himself or to his air-

craft, or his employees or workmen, and to assume all liability for damage to third parties or their property, and to indemnify the Royal Aero Club, the International Correspondence Schools, Limited, or the Grahame-White Aviation Company, Limited, in respect thereof.

Mortimer Singer Long Distance Balloon Contest.

Mrs. A. Mortimer Singer, on Saturday last, the 16th inst., made an ascent in connection with this Contest. The start was from Battersea and the descent was made in the vicinity of Launceston in Cornwall, a distance of nearly 200 miles. This ascent will qualify for the Cup, which will be awarded for the longest distance made by a balloon in one flight up to December 31st, 1914.

166, Piccadilly, W. HAROLD E. PERRIN, Secretary.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Eastchurch Flying Grounds.

Monday, last week, fine. The following machines were up:—No. 31 Henry Farman, 150 Avro, 104 Sopwith, 34 Short, 50 B.E., 3 Short and 2 Short, 16 Avro; Lieut. Littleton to Whitstable.

Tuesday fine. No. 66 Short gun machine, 2 Short, 104 Sopwith, 36 Deperdussin, 49 and 50 B.E.s, 24 Bristol and Deperdussin.

Wednesday fine. No. 50 B.E., 31 Henry Farman, 2, 3 and 62 Shorts, 43 Bristol Tractor 80 H.P., 150 Avro.

Thursday fine. Nos. 62, 2 and 10 Shorts, 43 Bristol Tractor, 31 Henry Farman, 49 and 50 B.E.s, 150 Avro, 40 Caudron.

Friday fine. Lieut. Davis and passenger on 43 Bristol Tractor cross country, 104 Sopwith, 150 Avro, 153 and 43 Bristol, 49 B.E. and 50 B.E., 66 Short gun machine, 31 Henry Farman, 2 and 62 Shorts.

Saturday rather windy. No. 31 Henry Farman, 104 Sopwith, 49 and 50 B.E.s, 43 and 153 Bristols, 2 Short, 150 Avro. The



Mr. Victor Mahl, who has just secured his pilot's certificate on a Sopwith machine. It will be remembered Mr. Mahl was the mechanic who assisted Mr. Howard Pixton recently during his flight at Monaco in connection with the Schneider Cup, &c.

First Lord, Mr. Winston Churchill, paid a visit to the Naval school during the day.

Sunday fine but windy. Mr. Hamel on monoplane with Mr. Winston Churchill as passenger arrived from Hendon about 5 p.m., stopping about half an hour, then later leaving for Isle of Grain (looping over Sheerness Harbour).

Civilian Flying.—Monday and Tuesday, Mr. Alec Ogilvie was out on both his machines the 25 and 50 Wright.

Brooklands Aerodrome.

ON Monday morning last week, Lieut. Rabagliati passed his *brevet* tests in good style on a Bristol biplane, rising to 450 ft. for the altitude. The Bristol and Vickers schools were at work. Lieut. Collett, R.N., flew to Gosport on the D.F.W. biplane. M. Verrier (with Mr. Brown as passenger) arrived on a Henry Farman biplane *en route* for Farnborough. In the afternoon Lieut. Robin Grey (with an air mechanic as passenger) came in on Sopwith biplane No. 319 from Farnborough, returning there after a short stay. Mr. Pixton made a couple of flights on the Sopwith "scout." Lieut. Granville arrived from Farnborough on H.F. No. 339, returning there after a short stay. Lieut. Wilson also came from Farnborough on the 50 h.p. Avro No. 290, returning later. Mr. Mahl was out with Mr. Pixton for tuition on the 80 h.p. standard Sopwith. Mr. Barnwell flew across country with a passenger on the Vickers gun 'bus, rising to 3,500 ft. *en route*. Vickers and Bristol pupils again out. Mr. Mahl doing straights and long hops on 80 h.p. standard Sopwith. Wind variation between zero and 26 miles an hour.

Mr. Mahl was doing straights on 80 h.p. standard Sopwith on Tuesday morning. Mr. Barnwell took up a passenger on the Vickers gun-carrying biplane. No. 4 Sopwith "scout" arrived. In the afternoon, Lieut. Wilson in from Farnborough on Sopwith No. 329, returning there. Mr. B. C. Hucks out on his "looping" Blériot, completing six loops and flying upside down for three-quarters of a mile. Mr. Mahl doing straights up to 500 ft. on the 80 h.p. standard Sopwith. Vickers and Bristol schools again at work. Mr. Mahl circuits and figure of eight on 80 h.p. Sopwith. Mr. Pixton on No. 3 Sopwith "scout." Wind between zero and 24 miles an hour.

On Wednesday morning, Bristol and Vickers pupils out. Mr. Mahl for 20 mins. flight (up to 2,500 ft.) on the 80 h.p. Sopwith. Departure of Mr. B. C. Hucks' "looping" Blériot. In the afternoon, Mr. Pixton out on Sopwith "scout," Mr. Barnwell for solo flights on 70 and 50 h.p. Vickers biplanes. Vickers and Bristol school work. Mr. Pixton to Farnborough on No. 4 Sopwith "scout." Wind variation 0 to 22 miles.

Three *brevets* were passed in good style on Thursday morning, respectively by Mr. Peter Liddell (Vickers biplane, altitude 600 ft.), Mr. R. M. Murray (Vickers biplane, record altitude of 3,200 ft.), Mr. Victor Mahl (Sopwith biplane, altitude of 1,000 ft.). Vickers and Bristol pupils out. In the afternoon Mr. Barnwell testing new 50 h.p. Vickers biplane. Mr. Mahl for two good flights on the 80 h.p. Sopwith. Arrival of Mr. Hamel and passenger from Winchester. Solo flight by Mr. Hamel, including one loop, one turnover, and one tail-slide. Bristol and Vickers pupils out.

Vickers and Bristol pupils out Friday morning. Mr. Mahl on 80 Sopwith. Lieut. Lawrence with passenger from Farnborough on B.E. No. 239, afterwards returning there. Mr. Mahl out again on 80 Sopwith, carrying two passengers second time. In the afternoon, Mr. Busted arrived from Farnborough on the 80 h.p. Bristol "scout," on which he had accomplished a fine performance, having been officially tested at 97½ miles per hour (fast) and under 40 m.p.h. (slow), the machine climbing 3,500 ft. in the excellent time of 4 mins. This machine is, therefore, the fastest machine in England at the present time, and the fastest of its size in the world. Mr. Hamel out on his "looping" Morane, doing two loops and one tail-slide, afterwards taking up Lady Juliet Duff as a passenger. Mr. Busted out again on Bristol "scout." Wind variation 0-20 m.p.h.

On Saturday, too windy for school work. Mr. Hamel left for Oxford with Lady Juliet Duff as passenger. Mr. Barnwell passenger carrying on Vickers gun 'bus. M. Marcel Desoutter arrived from Hendon on Lord Edward Grosvenor's 50 h.p. Blériot. Mr. Busted out on the Bristol "scout."

Mr. Busted was first out on Sunday on the Bristol "scout," flying strongly and well in a gusty wind, the machine proving to be a veritable "space-eater." Messrs. Barnwell and Knight were out on Vickers biplanes. Mr. Skene (who recently accomplished some

fine "looping" flights at Buc flew to Aldershot and back on Lord Edward Grosvenor's 50 h.p. Blériot. The winners of the ballot for the free passenger flights—Mrs. Gerrie, of Shepperton, and Mr. John Flores Lingeman, of St. Margaret's-on-Thames—were taken up by Messrs. Barnwell and Knight on Vickers biplanes.

Bristol School.—Monday last week Merriam and Stutt were out with Capt. Walcot (2), Mr. Lagrange, Lieut. Mills (2), Mr. Gresley (3), and Mr. Hay (4), as passengers. Lieut. Rabagliati then completed the tests for his certificate, flying splendidly throughout.

Jullerot, Merriam and Stutt on Tuesday took the following pupils for tuition:—Lieut. Bonham-Carter (3 flights), Mr. Lucas (3), Mr. Lagrange (2), Mr. Gresley (4), Mr. Parker (3), Capt. Walcot (1), Lieut. Mills (2), Lieut. Richard (2), Mr. Eastwood (1). The weather was too windy for solo flying by pupils.

Wednesday, passenger tuition was given to Mr. Gresley (6), Mr. Eastwood (2), Lieut. Richard (2), Mr. Lagrange (3), Mr. Racine Jacques (4), Capt. Walcot (1), Mr. Parker (4), Lieut. Bonham-Carter (3), and Lieut. Mills (1). In the evening Stutt made a test, but the weather was too bad to continue.

Thursday, Merriam and Stutt were out with Mr. Parker (4), Mr. Eastwood (3), Mr. Gresley (3), and Mr. Racine Jacques (2). Solos were executed by Capt. Walcot (1), Mr. Lagrange (3), Mr. Racine Jacques (4), and Lieut. Mills (2).

Jullerot and Stutt were out Friday with Mr. Eastwood (5), Mr. Gresley (5), Mr. Parker (2), Mr. Lagrange (2), Capt. Walcot (1), solo flights made by the following pupils: Mr. Lagrange (3), Mr. Parker (2), Lieut. Mills (4), Capt. Walcot (2), Mr. Jacques (1).

Vickers School.—Instructors at work during last week, Barnwell, Knight, Elsdon and Webb.

Monday, with instructor, Major Phillips, Lieuts. Wood-Smith and Tennant, Messrs. Murray, Wilson, Parker and Steinbach; Lieut. Leighton and Mr. Murray solos, also Mr. Liddell, all biplane.

With instructor Tuesday, Major Phillips, Lieut. Wood-Smith and Messrs. Wilson and Steinbach. Messrs. Liddell and Murray solos, Lieut. Tennant and Mr. Collins with instructor.

Wednesday, with instructor, Lieuts. Tennant and Wood-Smith, and Major Phillips and Messrs. Steinbach, Wilson, Collins and Parker. Messrs. Liddell and Murray solos. Barnwell testing new school biplane.

Thursday, with instructor, Major Phillips and Messrs. Steinbach, Wilson, Collins and Parker. Major Phillips and Lieut. Wood-Smith solos. Messrs. Liddell and Murray both for *brevets* in excellent style.

Friday, with instructor, Messrs. Steinbach, Wilson, Collins and Parker. Major Phillips, Lieut. Wood-Smith and Mr. Collins solos.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Monday, last week, Messrs. Cowley, Shepherd, Peck, Y. Y. Liu, Moore, P. Robinson straights with Instructors Birchenough and Howarth. Mr. Smiles and Major Piercy solo circuits, figures of eight, &c. Messrs. Winter, Howett and Palmer rolling with Instructor Barrs.

Tuesday, Messrs. Robinson, Howett, Shepherd and A. Boyesen straights with Instructors Birchenough, Howarth and Lillywhite. Mr. Cowley solo straights.

Wednesday, Mr. Peck, Messrs. Weber, Y. Y. Liu, Carpenter, Shepherd, North, Howett, Lowe, Moore, Robinson, A. Boyesen and Carpenter, straights with Instructors Birchenough, Lillywhite, Howarth and Barrs. Mr. Moore solo straights and circuits. Mr. Cowley solo straights. Mr. Smiles solo circuits, figures of eight, &c.

Thursday, Mr. Smiles solo circuits, &c., afterwards going in for and passing *brevet* tests. Messrs. Y. Y. Liu and Wyles rolling

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Hucks and Manton at Norwich.

IN glorious weather Mr. B. C. Hucks, as well as his understudy, Mr. Manton, gave looping demonstrations at Hethersett Racecourse, near Norwich, on Thursday, Friday and Saturday of last week. On Thursday, in his 80 Blériot, Mr. Hucks commenced with his usual steeple-chasing and vertical banks, and afterwards he gave four passenger flights. After the tea interval he looped many loops, and flew upside-down. About 7 p.m. the new looping machine was brought out, and after being duly strapped in Mr. Manton rose to nearly 3,000 ft., made a fine "S" dive, followed by a loop. Climbing again he made two more loops and then landed. On Friday a similar programme was carried out. On Saturday, Messrs. Hucks and Manton gave a combined demonstration of trick-flying; circling in unison and arousing considerable enthusiasm. A cross-country race to Trowse Viaduct was then flown, resulting in a victory for Manton by a few yards. Mr. Hucks, after tea, got out his looper, and gave a wonderful exhibition, while Manton made five loops. Mr. Hucks closed the proceedings with another passenger flight.

On Friday, Lieut. Baumann flew over from Yarmouth Air Station on his Maurice Farman biplane, landed at the Hethersett Racecourse, witnessed the day's flying, and in the evening left again for Yarmouth.

with Instructor Barrs. Messrs. Howett, Carpenter, Peck, Palmer, Weber, Winter, Boyesen straights with Instructors Birchenough, Howarth and Barrs. Mr. Cowley solo straights.

Friday, Major Piercy solo straights, circuits, &c. Messrs. Peck, Shepherd, Weber, Cowley, Wyles, Lowe, A. Boyesen, Moore straights with Instructors Birchenough and Barrs.

British Caudron School.—The Caudron school was out at 4 a.m. Monday, last week, under the instruction of W. T. Warren and Rene Desoutter. Mr. Curtis doing circuits and figures of 8, getting in good three-quarters of an hour's flying. Mr. Curtis went for his *brevet* tests, which he took in excellent style, doing his figures with clock-like regularity, at a height of 900 ft., also doing his *vol plané* in excellent style. Mr. Garvin also doing circuits and straights on a *brevet* machine, getting in good half-hour's flying. Instructors W. T. Warren and Rene Desoutter put in some excellent flying while testing school machines.

Tuesday, school out in the evening, under the instruction of W. T. Warren and R. Desoutter. W. T. Warren test flight. Mr. Garvin doing circuits and landings from 150 ft., getting in good three-quarters of an hour's flying.

At 4.30 Wednesday, school out under the instruction of W. T. Warren and R. Desoutter. W. T. Warren flight on *brevet* machine, Mr. Garvin on same doing straights and half circuits. Mr. Macgregor doing half circuits and straights, flying for three-quarters of an hour. Mr. Warren gave Mrs. Buller first instruction on machine, Mrs. Buller finding it strange after Breguet machine on account of foot work. R. Desoutter flight.

Thursday, school out at 4.40 a.m. under the instruction of W. T. Warren and R. Desoutter. W. T. Warren flight. Mr. Garvin doing circuits. Mr. Macgregor half circuits, improving. Mrs. Buller doing straights and progressing with rudder. R. Desoutter flight 10 mins.

At 4.30 a.m. Friday, school out under the instruction of W. T. Warren and R. Desoutter. Mrs. Buller doing straights. Mr. Macgregor doing straights and half circuits. R. Desoutter flight.

Hall School.—Monday, last week, gale and rain stopped work. Tuesday, J. L. Hall out several times on Avro. H. C. G. Allen six good straight flights on his 35 Anzani-Blériot mono. Wednesday, in morning Miss Sophie d'Elsa straights on Penguin.

Thursday, Messrs. Gearing eight straights on Caudron. A. L. Brookes six good flights at 20 ft. to 50 ft. Arcier six straights at 40 ft. Haines four straights on Penguin, Miss Dulcibella Clifford and A. Charig 12 mins. each with J. L. Hall on Avro.

Friday, in morning, Miss Sophie d'Elsa straights on Penguin. A. Charig half-dozen straights on Penguin, making good progress for a beginner. J. L. Hall out on Avro during day enacting scenes for Clarendon Film Co.

Mr. Clappen, who it will be remembered took his ticket last year on a Blériot, and has been instructor at the Blériot school for a considerable time, has now joined the Hall school as instructor. He was out several times during the week testing No. 1 Caudron. E. Palmer, who is ready for pilot's certificate, has been unfortunately ill the last fortnight, but hopes to be back again shortly.

Shoreham Aerodrome.

Pashley School.—B. F. Hale passed the certificate tests on Monday last week. The figure 8's were done in perfect style, landing right on the mark each time, and the glide was equally successful, alighting within 25 ft. of the mark.

Mr. Mortimer was also doing excellent circuits.

Messrs. Pashley have made several runs to Worthing and landed on the sands, one with the leading man at the Theatre Royal.

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Amongst the spectators on Friday were Squadron Commander Gregory and Lieut. Kershaw from the Air Station at Yarmouth.

London to Liverpool on a Blériot.

ON Sunday last, Mr. T. Elder Hearn flew from Hounslow to Liverpool. He made a stop at Wolverhampton for petrol and lunch, and later in the afternoon went on to Liverpool, flying along the Mersey, round the tower at New Brighton, and landing at the Childwall Polo Grounds.

Miss Trehawke Davies' Cross-Channel Trip.

FOR the sixth time, Miss Trehawke Davies crossed the Channel on the 14th inst. Piloted by Mr. Crawshaw, on a Blériot machine, the start was made from Hendon at 11.53 a.m., and Hardelet reached at 2.14 p.m. It was proposed to go on to Buc, but motor trouble entailed a stop at Champagne, 35 kil. north of Paris.

To Help the Benevolent Fund.

IT may be recalled that Mr. Hucks recently announced his intention of charging 6d. for his autograph, the proceeds to be devoted to the Aviation Benevolent Fund. For this purpose a special stamp has been prepared, which has, by the way, been printed by the Dangerfield Printing Co. and presented by them to the fund. These stamps are affixed wherever Mr. Hucks signs his autograph, and they have created quite a brisk demand.

EDDIES.

ALTHOUGH it has not been generally known, Marcus D. Manton, who it will be remembered, has joined B. C. Hucks, has been quietly practicing looping for some time past, and on Thursday of last week he gave a public demonstration of looping and upside down flying at Norwich. Going up to a considerable altitude, he made first three loops, and then, after having climbed another few hundred feet, two more loops in quick succession. The reception accorded him was so hearty as to be almost painful, Manton informs me. The crowd broke out of the enclosure and surged round him; and instead of reaching the tea tent for which he was heading, he was carried a quarter of a mile away. The other day Manton and Hucks arranged a nice little race, each flying one of the looping machines, which are both of approximately the same speed. It was very amusing, Manton says, to see the other Blériot bobbing up and down as the machines rose and sank on the air waves, and he had an excellent chance of watching it, as the machines were flying side by side and very close together.

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Harold Blackburn tells me of a rather exciting experience he had recently, when testing a new 80 h.p. Avro biplane near Manchester. Starting from a field at Bellevue, he lost sight of the field in which were H. V. and A. V. Roe and their men; and as his tanks were full, and he did not know the locality very well, he decided—to use his own expression—that he might as well be hanged for a sheep as a lamb, and so he set out for Harrogate, trusting to fly into fine weather. After flying for about an hour without sighting the ground, he came down very gingerly, and found himself over some very high hills, which he took to be the Pennines. He, therefore, concluded that his compass must have been quite wrong, as it had not been tested in the new machine; and so climbing again, he flew on, steering by an occasional glimpse of the sun, and finally came out of the mist close to Mansfield after two hours' flying with one cylinder hot.

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Evidently Messrs. Perry, Beadle and Co., who, it will be remembered, exhibited a very original flying boat at the last Olympia Aero Show, do not intend to confine themselves to hydro-aeroplanes, for last week, when I was at Brooklands, a small Perry, Beadle tractor biplane, fitted with a 45 h.p. Anzani engine, was being unloaded from a lorry. I gather that this machine will be tested shortly at the Brooklands Aerodrome.

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I hear that M. Louis Blériot has just laid down a very expensive plant for the commercial manufacture of *monocoque* type fuselages, so that it appears that M. Blériot considers this form of construction worth developing. Several of these machines have been built for experimental purposes, and it was not until after extensive tests that it was decided to lay down the above mentioned plant.

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This year's Aerial Derby promises to be an uncommonly good race, for the majority of the machines entered are fairly well matched. The two Sopwiths, the

Bristol, Avro and Vickers scouts are all very fast machines. Whilst the three or four 80 h.p. Moranes are all naturally of practically the same speed. There are also one or two "dark horses" in the way of new and untried machines, which may provide some startling performances. In all probability nearly all of the machines entered will start in the race, so that I should recommend all of our readers who can possibly manage to do so, to endeavour to see the race either from the starting point at the Hendon Aerodrome or from one of the turning points.

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It was an unexpected pleasure to see Mr. W. Brock (who, it will be remembered, put up some remarkable performances on the little 35 h.p. Dep. during last year, and who later joined the Grahame-White firm), at Hendon on Saturday last, for I knew that he went across the "pond" some time ago, and that he was hardly expected back so early. Asked whether he had grown to like this country so well that he preferred it to his native land, he said that although England was "a cute little toy country," it was not exactly geographical preferences that had brought him back so soon.

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It appears, according to Brock, that things aviatric don't look particularly rosy on the other side. The trouble seems to be that the Wright Company will not make a definite statement as regards the royalty which they intend to claim on machines built by other firms. Brock informs me that there are a number of people who would be quite willing to pay a reasonable royalty, provided that they were able to ascertain beforehand what the said royalty would amount to, but it is naturally difficult to secure capital when there is no guarantee that the Wright Company will not claim the whole of the profit.

The public, Mr. Brock says, has lost all interest in aviation, and the only way in which public enthusiasm could be aroused again would be by putting up some startling performances on a really good machine, such as, for instance, one of the best of British machines. But then, who would risk the wrath of the Wright Company in the form of a prohibitive royalty?

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It, therefore, seems that the Wright Co. is the bugbear of aviation, at least, as far as America is concerned; and Mr. Brock has now returned to this country to try and find a scope for his abilities. I should not think that he would have much difficulty in doing so, for although Brock does not possess that faculty which is so highly developed in some of his compatriots—that of advertising himself—those who know him best realize that he combines great practical experience with a sound knowledge of the theory of flying, in addition to being a thoroughly reliable pilot.

Brock showed me some designs for a machine intended for the Gordon-Bennett race, which he would like to have had some American firm enter for, but which was out of the question under the present conditions in that country, and I can only hope that some British firm will "discover" him and benefit by his abilities.

"ÆOLUS."

WILBUR WRIGHT MEMORIAL BANQUET.

THE annual banquet in connection with the Wilbur Wright Memorial Lecture of the Aeronautical Society was held at the Royal Automobile Club on Tuesday evening, at which Maj.-Gen. R. M. Ruck, the Chairman of the Society, presided. Among those present were: Col. Seely, M.P., Lord Montagu of Beaulieu, the Hon. Arthur Stanley, Brig.-Gen. D. Henderson, Col. F. H. Sykes, Brig.-Gen. Guthrie Smith, Lord Dunboyne, Maj.-Gen. von Donop, Col. Rawson, Col. Capper, Capt. Murray Sueter, R.N., Major the Hon. Claude Brabazon, Sir William Beardmore, Sir John Shelley, Sir H. Donaldson, Sir Archibald Geikie, Dr. Stanton, Sir Chas. Ottley, Sir R. H. Brade, Lieut. A. Gibb, Lieut. Robertson, Dr. Hankin, Messrs. L. Bairstow, Mervyn O'Gorman, H. J. Tennant, M.P., Dr. A. P. Thurston, Messrs. H. T. Baker, M.P., A. E. Berriman, A. G. Bloxam, F. H. Bramwell, Griffith Brewer, G. W. Beatty, A. Graham Clark, B. G. Cooper, J. S. Critchley, W. Duddell, C. Gordon Bell, C. G. Grey, J. E. Hutton, Cedric Lee, F. K. McClean, Alec Ogilvie, F. Handley Page, J. H. Patterson, H. E. Perrin, G. F. Sharp, G. Holt Thomas, C. C. Turner, &c.

After the loyal toasts had been disposed of, Mr. Griffith Brewer presented a Report on the Wilbur Wright Memorial Fund, which amounted to £550. He said that in 1912 a fund of £400 was raised for the purpose of awarding educational premiums under certain conditions: and, at the time, it was agreed that the balance remaining at the end of five years should be returned to the subscribers; but Lord Northcliffe had promised to give £100 if the four donors would allow their subscription to be permanently transferred to the Memorial Fund. He had great hopes that in the year 1917, the latter fund would amount to £1,200, which had been suggested as a desirable capital sum for such a purpose.

The toast of the "Imperial Forces" was proposed by Lord Montagu of Beaulieu, and responded to by Rear-Admiral Sir Chas. Ottley and Major-General von Donop, the former observing that the strength of a nation should not be measured by machines alone, but by the personnel, and he believed that the same spirit animated the members of the Royal Flying Corps as was present with the men who had won the battles of the past century.

General Henderson, in proposing the toast of "Flying," observed that much had been done in development of the machines for military and commercial purposes, but he much regretted that, with few exceptions, flying had not appealed as a sport to the gilded youth of the nation, who seemed to be imbued with the idea that they owed a sort of debt to Society to die in their beds.

Col. Seely, in replying, called attention to the great strides made within the last year in military aviation, and commented upon the fact that over 600,000 miles had been covered by Service flyers during the past year. Wilbur Wright would have been astounded at this, as flying men would now go up any day of the year, no matter what might be the weather conditions, provided that sufficient cause were shown. The endurance of modern machines had greatly increased, and, in his opinion, the problem of the stable aeroplane had now been solved. On the preceding Friday he took part in a demonstration on an Army machine (R.E. 1) at Farnborough at a height of 2,000 ft. On reaching this elevation, the pilot (Mr. E. T. Busk) abandoned all control and sat with his hands behind his head while he (the speaker) steered the machine. He was pleased to say that the aeroplane automatically took the right banking at every turn, and in gusts, with a 28-mile per hour wind, the machine righted itself without any attention from the pilot. This was, to him, an immense achievement, and the society should be congratulated upon the fact that the two men who were chiefly responsible for it, were numbered amongst its members; but, he said, there still remained one great problem—namely, that of alighting safely. During the past year, while the number of Service machines had more than doubled, the number of aeroplanes owned by private persons for any purpose—sporting or commercial—had practically been halved. He attributed this partly to the difficulty of alighting, and we should not rest until we could say that in the matter of conquering the air, Great Britain was first.

Col. Capper, whose name was also coupled with the toast, briefly responded, recalling his experiences during a visit to the Wright brothers at Dayton in the middle of the last decade.

Sir Archibald Geikie and Mr. Duddell replied to the toast of "Kindred Societies," which was proposed by Mr. Mervyn O'Gorman, Mr. Duddell remarking that the assistance and co-operation of other Societies and Institutions, that was so much desired and emphasised by the proposer, was no one-sided affair; as he himself had derived much benefit from the work done at the N.P.L. in connection with wind tunnel experiments. Other people used impregnated fabrics besides aeronautical engineers, and anything that had been done to improve the quality of steels and increase the durability of engines would ultimately react beneficially upon other branches of engineering.

The toast of "The Visitors" proposed, in cordial terms, by Mr. Berriman and responded to by Sir H. F. Donaldson, brought a very pleasant and highly successful evening to a close.



The Army aeroplane, R.E. 1 which was flown before the King and Queen, on Tuesday last, by Mr. E. T. Busk, with Major Clive Wigram as passenger. It was this machine that was referred to by Col. Seely at the Wright Memorial Banquet, and by Dr. Glazebrook in his lecture on Wednesday before the Aeronautical Society, on the "Development of the Aeroplane." In general appearance the R.E. 1 resembles the B.E.s., and its stability is not due to any radical departures in design, but must be explained, we think, by careful scientific proportioning of surfaces and distribution of weights. From the accompanying photograph it will be seen that *ailerons* are fitted to both planes, presumably more in order to inspire confidence on the part of the pilot than because they are actually needed.

THE R.F.C. MILITARY WING MISHAPS.

The Catastrophe at Northallerton.

THE accident which occurred at Northallerton on Friday of last week, in which Lieut. John Empson and Air-Mechanic George Cudmore, of No. 2 Squadron Military Wing R.F.C., was the subject of a coroner's inquest at Lonesome Hill, Northallerton, on Saturday.

Major C. J. Burke, in command of No. 2 Squadron, said they left Montrose on Monday morning, and everything went well until leaving Seaton Carew on Friday morning. It was perfectly clear when the witness left Seaton Carew. He could not say when Lieut. Empson left. The machines were always examined and overhauled before a flight. Lieut. Empson was perfectly competent. The witness went north as soon as he left Seaton Carew, as he saw fog and mist arising when five miles out. They had general instructions to follow to the effect that in the event of fog no landing had to be effected on the landing ground.

The Coroner said he thought the instructions might be made a little more explicit. If the airmen saw fog arising, could they not descend where it was clear?

Major Burke replied that this would be impossible, as the fogs moved about, the air being clear at one moment and dense at the next. From his investigation, it was clear that the machine overturned on its back after striking a hedge. He believed the two men were *vol planing* very fast at the time.

Dr. Tweedy stated that when he saw Lieut. Empson he was dead, being inside the wreckage on his back with his knees drawn up. His head was severely crushed, and he had received internal injuries. Death was instantaneous.

Dr. Carter stated that the base of Cudmore's skull was fractured and he had internal injuries, either of which would have caused immediate death.

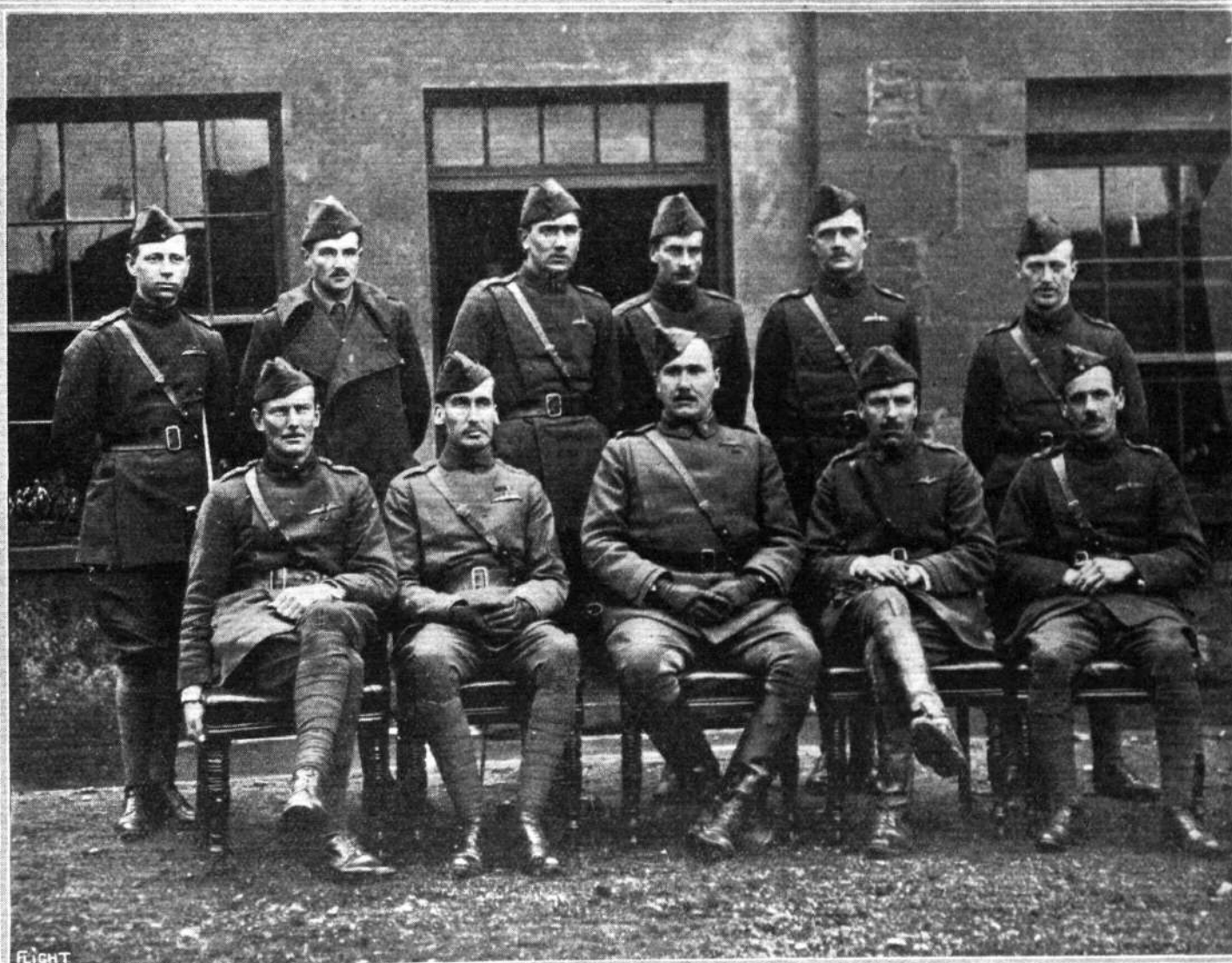
The jury returned a verdict of "Accidental death," and expressed sympathy with the relatives.

The Farnborough Smash.

AN inquest was held on the 14th inst. at the Connaught Military Hospital by Mr. Hugh Foster, deputy-coroner for Aldershot, on the bodies of Captain E. V. Anderson, flight commander of No. 5 Squadron Military wing, R.F.C., and Air-Mechanic Carter, who were killed in the collision on Tuesday. Lieut. C. W. Wilson, of the same squadron, who was injured in the collision, was unable to attend.

Major J. F. A. Higgins, commanding No. 5 Squadron, said that Capt. Anderson and Lieut. Wilson were both good pilots. The machines which they used were of the ordinary Sopwith type, and were practically new. The witness himself had piloted both machines. Capt. Anderson had flown similar tractor biplanes for several months, but this was his first flight in a Sopwith machine. Although the Sopwith machines had been in the squadron for some time they had not been used much because slight structural alterations were being made, so slight that in the case of Capt. Anderson's machine they involved only the addition of a wire. The alterations had no effect upon them.

Lieut. Wilson started on a trip to Brooklands about 4 o'clock. Just before 5, Capt. Anderson started for a short flight in order to get used to the machine, and up to a minute before the accident he



Officers of No. 2 Squadron, R.F.C., Montrose, who have just had such a trying experience in their journey from Montrose to the south. From left to right, standing: Lieut. Harvey Kelly, Lieut. Empson (who was killed last week), Lieut. Corballis, Lieut. Noel, Lieut. Rodwell, Lieut. Mastyn. Seated: Capt. Todd, Capt. Dawes, Major Burke, O.C., Capt. Waldron, Lieut. Dawes.

was flying perfectly. After Capt. Anderson started the witness saw Lieut. Wilson's machine coming back. The latter might then have been 2,000 ft. up, but Capt. Anderson's biplane was a good deal lower. The witness paid no further attention to the flying until he heard an exclamation. Then he saw that one of the machines was spinning round horizontally, apparently with a broken wing, while the other seemed to be dropping vertically to the ground. On his arrival at the scene of the accident he found both machines wrecked, Lieut. Wilson lying down and Capt. Anderson and Air-Mechanic Carter dead.

Replying to questions, Major Higgins said that when machines were started from different points they could not tell every pilot which machines were already in the air, but Capt. Anderson knew that Lieut. Wilson had gone to Brooklands. At certain angles pilots might have some difficulty in seeing straight ahead, and there was sometimes a difficulty in seeing upwards because of the top plane, but pilots were always careful to dip at intervals in order to enlarge their field of vision. The witness explained the inter-

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ROYAL FLYING CORPS.

The following appointments were announced by the Admiralty on the 13th inst. :—

Lieuts. J. T. Babington to the "Pembroke," additional, for Isle of Grain Naval Air Station, and F. E. T. Hewlett, to the "Pembroke," additional, temporary, both as Flight Commanders. To date May 6th.

The following appointments were announced in the *London Gazette* of the 15th inst. :—

R.F.C.—Military Wing.—The undermentioned appointments to take effect from April 28th, 1914 : To be Flying Officers, and to be seconded : Capt. Lionel E. O. Charlton, D.S.O., Lancashire Fusiliers; Lieut. Augustus C. E. Marsh, Royal Artillery; Lieut. Amyas E. Borton, Black Watch (Royal Highlanders); Lieut. Hyacinth J. A. Roche, Royal Munster Fusiliers; Lieut. Robert J. F. Barton, Royal Scots Fusiliers; Lieut. Wilfrid R. Freeman, Manchester Regiment; Lieut. William H. C. Mansfield, King's (Shropshire Light Infantry); Lieut. Charles B. Spence, Royal Artillery; and Second Lieut. William R. Read, 1st (King's) Dragoon Guards.

To the Reserve: Capt. Robert A. Boger, Royal Engineers; Capt. Hugh C. T. Dowding, Royal Artillery; Lieut. Alexander F. A. Hooper, Prince of Wales's (North Staffordshire Regiment); Lieut. William F. MacNeece, Queen's Own (Royal West Kent Regiment); Lieut. Hugh F. M. Worthington-Wilmer, Royal Scots (Lothian Regiment); and Second Lieut. William F. R. Dobie, Gordon Highlanders.

Capt. Lionel E. O. Charlton, D.S.O., Lancashire Fusiliers, a Flying Officer, to be a flight commander. Dated May 1st, 1914.

The following were announced by the Admiralty on the 19th inst. :—Staff Surgeons Charles J. O'Connell, to the "Pembroke," additional, for Calshot Naval Air Station. To date May 27.

The following appointment was announced in the *London Gazette* of the 19th inst. :—

R.F.C.—Military Wing.—Second-Lieut. Alan Hartree, Royal Artillery, from the Reserve, to be a flying officer, and to be seconded. Dated May 3rd, 1914.

ROYAL FLYING CORPS (MILITARY WING).

WAR OFFICE summary of work for week ending May 16th, 1914 :—

No. 2 Squadron.—No. 2 Squadron Aircraft, and complete with Mechanical Transport and personnel, under the command of Brevet Major C. J. Burke, left Montrose on Monday, the 11th inst., on its journey to Netheravon, Salisbury Plain, to take part in the R.F.C. Military Wing Concentration Camp.

The itinerary has been as follows :—

Monday, 11th inst., left Montrose, arrived Edinburgh.

Tuesday, 12th inst., left Edinburgh, arrived Berwick.

Wednesday, 13th inst., left Berwick, arrived Blythe.

Thursday, 14th inst., left Blythe, arrived West Hartlepool.

The Aircraft and Mechanical Transport arrived to scheduled time at the points mentioned.

On Friday, the 15th inst., during the flight from West Hartlepool to York, the machines ran into a thick bank of fog. Three were wrecked and one was damaged in alighting. One of these accidents was the cause of the deeply-regretted deaths of Lieut. Empson and Air-Mechanic Cudmore. On the fog clearing, Major Burke concentrated the Squadron at the Knavesmire, York, where it was halted for the week-end as originally arranged. It will proceed, via Lincoln, Northampton, and Oxford to Netheravon this week.

No. 3 Squadron.—Numerous cross-country reconnaissances took place during the week. The pilots of all three "Flights" were out daily.

No. 4 Squadron.—A considerable amount of flying was carried

national rule which forbade pilots to approach within 50 metres of another machine, and the regulations governing meeting, passing, and overtaking. The area hidden from the pilot was not very large, and it was conceivable, although not very likely, that another machine might keep within that area. He was afraid that that had happened on this occasion. He was perfectly certain that the two pilots did not see each other until too late to avoid a collision.

Sergeant Mallett said that as the machines came into collision Mr. Wilson's lower left wing seemed to catch the tip of the upper right wing of Captain Anderson's biplane. Then after they had travelled about 200 yds. both machines fell.

Sergeant Mallett and Sergeant Patterson also stated that they inspected the machines and that both were in perfect order before the flight.

Major A. R. Greenwood, R.A.M.C., gave evidence that the necks of both airmen were broken.

The jury decided that there was no need to adjourn for Mr. Wilson's evidence, and returned a verdict of "Accidental death."

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out by all the Officer, N.C.O. and A.M. pilots, including reconnaissances over Salisbury Plain and the surrounding country.

No. 5 Squadron.—The pilots of this squadron were, during the early part of the week, engaged daily in reconnaissance flights.

No. 6 Squadron.—All three "Flights" were fully occupied in practising observation over the country round Aldershot. Several new officers reported themselves for duty with this squadron at the termination of their course at the Central Flying School on the 9th.

Nos. 1 and 7 Squadrons.—The organisation of the two newly-formed squadrons was proceeded with, and instructional work, lectures on aircraft, engines, &c., were carried out.

Aircraft Park.—Aircraft Park is kept fully occupied with overhauling engines, both aircraft and mechanical transport, and with general repair work.

Headquarter Flight.—Experimental work of various kinds from aircraft and free balloons was continued.

General News.—The Royal Flying Corps (Military Wing) has suffered severely during the week. Owing to fatal accidents whilst flying, two officers, Capt. E. V. Anderson of the Black Watch, and a Flight Commander in No. 5 Squadron, and Lieut. J. Empson, of the Royal Fusiliers, and a Flying Officer of No. 2 Squadron, lost their lives. In each case the air mechanic in charge of the engine was also killed—Air-Mechanic Carter, of No. 5 Squadron, and Air-Mechanic Cudmore, of No. 2 Squadron. The former was with Lieut. C. W. Wilson, with whose machine Capt. Anderson's collided, and the latter was with Lieut. Empson. Lieut. Wilson received injuries to his jaw, and is progressing favourably.

The funeral of the late Capt. Anderson and Air-Mechanic Carter took place at Aldershot on the 15th inst. Besides all the Officers of the Black Watch and all the Officers, Warrant Officers, Non-commissioned Officers and Men of the Royal Flying Corps (Military Wing), at Farnborough, a large contingent of the Royal Flying Corps (Military Wing) from Netheravon (Nos. 3 and 4 Squadrons) was also present. In addition, the funeral procession included Col. Marker, representing Sir Douglas Haig, General Lomax, Commanding the 1st Division, and representatives from every unit serving in the Aldershot Command.

The funeral of the late Lieut. Empson took place near Staddlethorpe on Wednesday, and that of Air-Mechanic Cudmore on Thursday, at Manchester.

Messages of sympathy have been received from the Prime Minister and the First Lord of the Admiralty.

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British Army Aeroplanes.

REPLYING to questions in the House of Commons, Mr. Harold Baker, Financial Secretary to the War Office, stated last week that the War Office at present has 176 aeroplanes, of which 70 are under repair; 136 machines are of British manufacture. It would not be in the public interest to state how many are fitted with wireless telegraphy or photographic apparatus.

South Africa and Aviation.

IT is announced that six officers, Capt. Wallace (in command), Lieuts. Emmett, Creed, Turner, Van der Spuy and S. Williams, of the South African Union Defence Force, have arrived in England to undergo a course of training at the Central Flying School.

Long Flight by Naval D.F.W.

LEAVING Gosport at 7.30 a.m. on Wednesday of last week, in the face of pouring rain and a N.E. wind, Lieut. C. H. Collet, R.M.A., of the Naval Wing R.F.C., made a splendid flight of 7½ hours across England on an all-steel 100 h.p. D.F.W. Arrow biplane. The machine carried a useful load of 1,400 lbs., including 125 gallons of petrol, oil and water, sufficient for a flight of 15 hours. The landing was effected between Hull and Grimsby.

FOREIGN AIRCRAFT NEWS.

Guillaux Beats a Record.

By cable it is reported that last week at Sydney, N.S.W., Guillaux on a Farman-Gnome machine succeeded in improving the height record for waterplanes by going up to an altitude of 2,133 metres.

Verrier Secures the Pommery Cup.

ALTHOUGH it appeared that the period for the first of the new series of Pommery Cups would pass without any contest, five machines were entered at the last moment, these being a H. Farman by Verrier, two Blériots by Pierron and Lenoir respectively, a Nieuport by Bonnier and a Borel by Chemet. Bonnier started from Villacoublay on the 13th, but he had to stop at Angoulême after covering 400 kiloms. The next morning he went on to Bordeaux, and after replenishment continued in the direction of Spain, but had to give up at Caudes after covering another 70 kiloms. Verrier started from Buc on his Henry Farman, and after a stop at Noyon flew to Genthin in Germany. Lenoir was the only other competitor to start, and he landed at Tours. Verrier thus secured first place with his flight of 830 kiloms.

Aeroplanes at French Review.

At the review at Satory on the 18th inst., in connection with the King of Denmark's visit to Paris, flights were made by two escadrilles, one composed of six Blériots, and the other of six Caudrons, while the dirigible "Eugene Montgolfier" cruised overhead.

From Paris to Sweden.

LAST week Dr. Thulin succeeded in completing a journey from Paris to Landskrona in Sweden on his 80 h.p. Rhone-Morane. The journey of 1,200 kiloms. was completed in 15 hours' flying time, and stops were made at St. Quentin, Brussels, Cleves, Bremen, and Lubeck.

Bobba Flying Again.

BOBBA, the well-known French pilot, after having given up flying for a year, has decided to return to it, at any rate while doing his period of military training. He is at present practising at the Morane military school at Villacoublay.

Last Sunday at Buc.

THE attraction arranged for last Sunday at the Blériot aerodrome at Buc was a series of matches between Legagneux on his 80 h.p. Clerget-Nieuport and Prevost on a 80 h.p. Rhone-Deperdussin. In the speed test Prevost won easily in 10 mins. 12½ secs., while Legagneux's time for the 20 kiloms. was 11 mins. 16½ secs. In the landing competition Legagneux was first—320 metres from the mark, beating Prevost by 121 metres, while in the 15 kiloms. handicap Legagneux had a walk-over, Prevost's machine being upset by a gust of wind as it was starting and breaking its propeller. During the afternoon a display of fancy flying was given by Cuendet, a *chef pilote* at the Blériot school.

An Aviator in the French Chamber.

THE French Chamber of Deputies now includes an aviator among its members. M. Pierre Flandin, who qualified on a Maurice Farman at Juvisy in March, 1912, having been elected to represent Avallon.

A Long Reconnaissance.

STARTING from Angers on the 17th inst., Lieuts. Volmerange and Gabriel and Sergeant Clement made a reconnaissance over Poitiers and the neighbourhood. The outward journey took 1 hr. 24 m. and the return 2 hours.

Flying to Orders.

IN response to orders from his superior officer, Sergeant Moulleres started off from Chalons on his M. Farman on the 16th inst. His first call was at Amiens, the 200 kiloms. being covered in 3 hours 5 mins. He then went on to Buc, taking 2 hours 10 mins. for the 150 kiloms. Covering another 180 kiloms. in 2 hours 55 mins., Troyes was reached, while the return journey to Mourmelon was made in 2 hours.

Three New Loopers.

At the Blériot school at Buc, on the 13th inst., Barault looped the loop four times. The Italian pilot Dal Mistro, who was taught by Pegoud in Italy, was also practising looping.

On the 14th inst. Lord Carbery looped at the Morane school at Villacoublay, while in Italy, A. de Dominicis looped on a Caudron.

The Sanchez-Besa Back at Issy.

THE Sanchez-Besa biplane, which paid a surprise visit to Hendon on the 3rd inst., returned to Issy on the following Friday.

The round trip from Paris, via Boulogne, Eastchurch, Hendon and Boulogne, represented a distance of about 650 miles, throughout which the machine was piloted by M. Laporte, who carried M. Sanchez-Besa as passenger.

Woman's Parachute Descent from Aeroplane.

AT Nevers, on Sunday last, Mme. Cayat de Castella repeated her exploit of descending from an aeroplane by means of a parachute designed by her husband. She made the ascent suspended by a belt under the fuselage of a Goupy biplane, piloted by Pelletier, and jumped off when the machine was at an altitude of 800 metres.

A Trip by Crombez.

SERG. CROMBEZ, who is now attached to the Belgian army, on the 16th inst. on his new monocoque machine, went from Taintignies to Brasschaet, covering the 165 kiloms. in 1 hr. 15 mins.

600 Kiloms. in Sweden.

ON the 15th inst., Dr. Thulin, on his Rhone-Morane monoplane, flew the 600 kiloms., from Malmö to Stockholm, in 4 hours 20 mins.

Sweden to Denmark by Aeroplane.

By the aid of Dr. Thulin's Morane, Lieut. Blixen Finecke was able to ride in races in Sweden and Denmark on the 17th inst. After a race at Gothenburg, he left at 2.15, and, piloted by Dr. Thulin, flew the 135 miles to Klampenborg racecourse, near Copenhagen, arriving ten minutes before his race was timed to start.

Four German Officers Killed.

ON arriving at Halberstadt from Doeberitz on the 17th inst., a monoplane capsized when at a height of 300 metres and fell to the ground. Both the pilot and the passenger, Lieuts. Fellingner and Wiegand were killed instantly.

While taking part in the Prince Henry competition on Sunday, the machine piloted by Lieut. Walz fell near Pforzheim. The pilot was seriously burnt, while the passenger, Lieut. Mueller, was killed on the spot.

Also on Sunday, another Prince Henry competitor, Lieut. Kolbe, met with disaster at Hechtsheim, near Mayence, while flying from Cologne to Frankfurt. The monoplane was apparently caught by a gust of wind and capsized when at a height of 400 metres. The pilot was severely injured in the head, while the passenger, Lieut. Rohde, died from his injuries in hospital the following evening.

Fatal Accident in Russia.

WHILE flying at the Sebastopol aerodrome on the 15th inst., the Russian military pilot, Semichkura, fell with his machine and was killed.

An Exhibition at Turin.

ALTHOUGH it is not very large, the exhibition of flying machines, engines and motor boats which was opened at Turin on the 17th inst. is very interesting, and it should do a great deal to quicken public enthusiasm in aviation matters. Italian-built Farman, Blériot and Nieuport machines are included among the exhibits, as well as Gnome, Rhone and De Dion motors, while the Italian military authorities have arranged a comprehensive display. The exhibition was opened by the Mayor of Turin in the name of the King.

A Farman Waterplane in Australia.

A DESPATCH from Sydney, N.S.W., which has been received by MM. Farman Frères, states that some tests have been carried out successfully at Sydney with a Farman waterplane piloted by Guillaux. The tests were witnessed by representatives of the naval and military authorities.

Height Record by New Zeppelin.

DURING her trials at Friedrichshafen on the 16th inst. the new Zeppelin for the German Navy, "L 3," having 17 persons on board, ascended to a height of 3,125 metres (10,253 ft.), which is claimed as a world's airship record. Previously the record was held by the French airship "Conte" with 3,080 metres.

A Voyage by "Victoria Louise."

THE Zeppelin liner, "Victoria Louise," started from Frankfurt on the 9th inst., at 5 a.m., and went to Oos, Baden, where she will be stationed for a week or two. The trip occupied 3 hrs. 35 mins.

Three-Hour Trip by "Eugene Montgolfier."

ON the 13th inst., the French military dirigible, "Eugene Montgolfier," made a voyage of over three hours' duration from Issy. She was commanded by Capt. Precheur, and carried a crew of eight. The following morning a 4½-hour voyage with 11 persons on board was made over Rambouillet, Mantes and Vernon.

THE FLYING MACHINE FROM AN ENGINEERING STANDPOINT.

By FREDERICK WILLIAM LANCHESTER, M.Inst.C.E.

(Continued from page 526.)

It would appear from recent experiment that my conclusions, as given in Tables III and IV, though in the main correct, require revision; at least in a quantitative sense. Thus plotting values of the pressure constant, as derived from Table IV, for different values of aspect ratio, and as determined for the condition of least

In Fig. 18, the N.P.L. curve from Fig. 17 has been plotted for comparison with the curve of the normal plane. It is well known that the pressure constant of the normal plane is greater for planes of elongate form; the normal plane curves given in Fig. 18 are based on the determinations of Langley and Dines, as given in *Aerial*

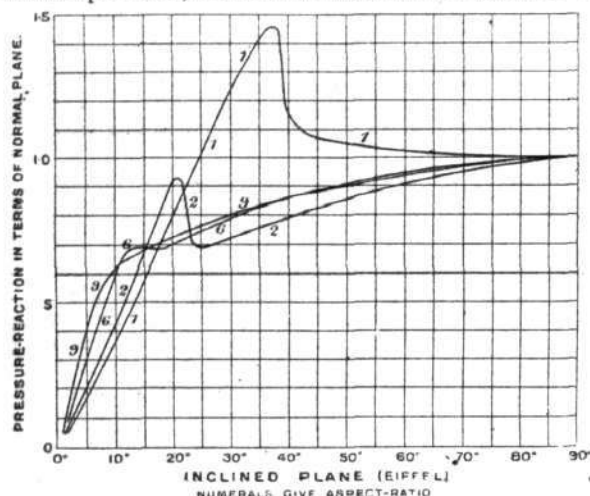


Fig. 14a.

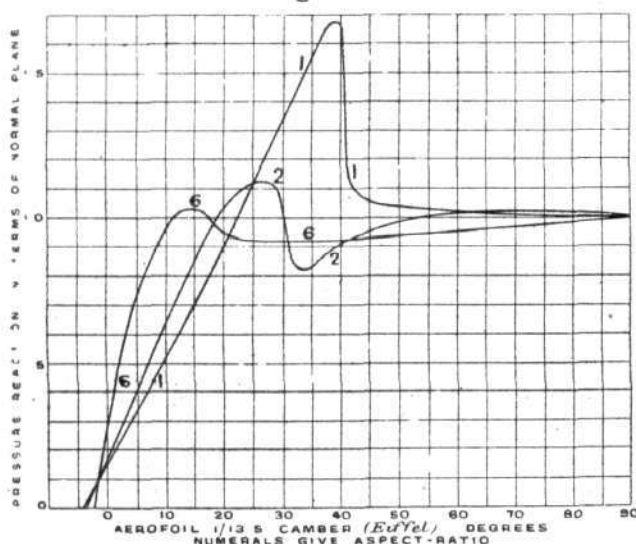


Fig. 14b.

resistance (max. lift/drift) by the N.P.L., Fig. 17, we find the two in perfect agreement for aspect ratio = 6; we also find that both graphs slope in the same direction, namely, they give a higher pressure constant as appropriate to higher aspect ratio; we do not, however, find justification for the extent of the difference as given in my Table: the N.P.L. curve gives the effect as very slight indeed,



Fig. 15.

in fact, almost negligible, the pressure constant for the aerofoil tested might be assumed as 0.32 for all values of aspect ratio without serious error.*

* The series of observations from which the curve N.P.L. in Fig. 17 was plotted are those given in Advisory Committee Report 1911-1912, Memo. 60, § vi, Plate 3; the section of the form of aerofoil used is given in the Report, and is reproduced in silhouette in Fig. 18. The value of the pressure constant (at maximum lift/drift) evidently varies considerably for different forms of section. Rejecting forms that may be considered bad on account of their low maximum, we find:—In Report 72 (1912-1913) the fourth, fifth and sixth sections given in Fig. 1, constants 0.322, 0.334 and 0.334 respectively. In the same Report, section ii, figures are given of the tests of four aerofoils varied as to bluntness of leading edge. The three best of these each had a constant approximately 0.4. In the same Report an aerofoil corresponding in form to "R.A.F. 6" gave a value almost exactly 0.3.

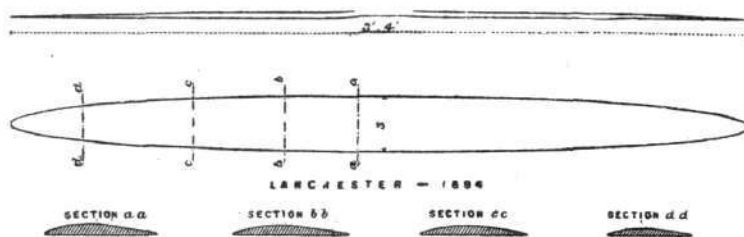


Fig. 16.

Flight (the upper curve); and the more recent determinations of Mr. Eiffel, the values according to this authority being very much lower. On the left, on the line aspect ratio = 1, we have the value for the square plane as determined by the N.P.L., and a curve is shown (dotted) directed towards this point as being the nearest we can at present do towards a representation of the truth.

The relation of the normal plane curve to the N.P.L. curve aforesaid is most suggestive; it happens that the values of the constants are almost exactly in the relation of two to one, this is probably a mere coincidence; a more important fact is that the increase of the pressure constant of least resistance (touching changes of aspect ratio) for the aerofoil is almost exactly proportional to the ordinary pressure-increase in the case of variations of proportion in the normal plane. This suggests that the increase in the two cases is due to the same primary cause; also that the coefficient of camber proper to least resistance is a quantity independent of the aspect ratio.

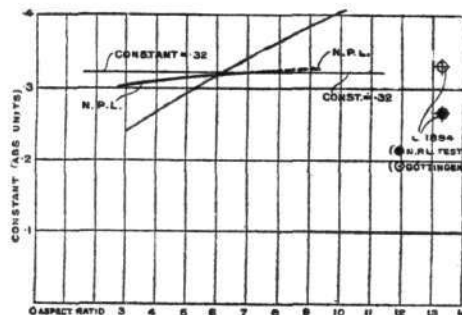


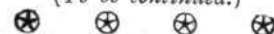
Fig. 17.

If this should turn out to be the case the reduction of the resistance for aerofoils of high aspect ratio may be regarded as due entirely to the fact that, where the cyclic component is stronger, the dip of the leading edge can be increased at the expense of that of the trail, that is to say, the chord angle may be diminished with higher aspect ratio, and with it the trail angle will be also diminished. This is contrary to the tabulated results of Table III; if true it must lead to the reconsideration of some of the assumptions on which I based my theory, or at least in the revision of some of the values of my constants.

It spite of the evidence, it is by no means certain that the matter is quite as simple as it appears. It is to be observed that any investigation to determine the effect of aspect ratio must of necessity involve a very complex experimental campaign, not merely a set of determinations with some half dozen or so models sawn off to length from a piece of Blériot or de Havilland "moulding"; this is exactly what was done in the experiments forming the basis of the plotting given in Fig. 17; any such method of investigation is liable to prove delusive.*

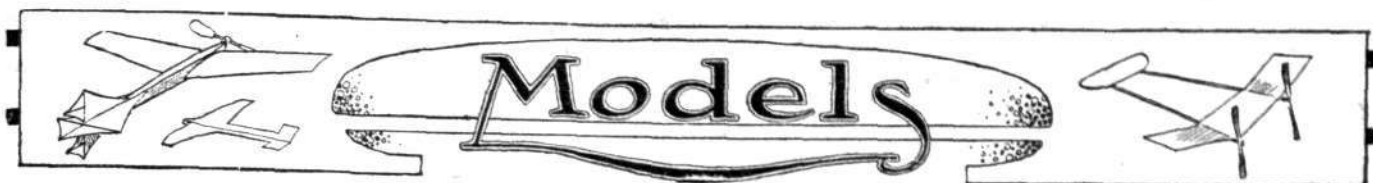
* It is an old axiom that in conducting a scientific research only one condition (when possible) should be changed at a time. In trying to adhere to this rule too literally it is easy to mistake the shadow for the substance; in the present example, to vary the length of an aerofoil of constant section may appear superficially to be "changing one condition," but in reality it is nothing of the kind.

(To be continued.)



Mr. J. L. Hall's Machines.

By an oversight, in our last issue, when referring to Mr. J. L. Hall, whose portrait appeared in our Men of Moment, no mention was made of his latest acquisition a 50 h.p. Avro, on which some of the best of his most recent flying has been carried out at Hendon.



Edited by V. E. JOHNSON, M.A.

Canard Type Models.

"As some misapprehension appears to exist amongst your readers," writes Mr. W. E. Evans, "respecting my remark that the canard type model had practically received its death-blow, and as you are uncertain as to what I intended to convey by my remark, I should like to give my reasons for making an apparently rather sweeping observation."

"The main point is that the type in question in full-sized work has been tried and found to be constructionally weak or dangerous to fly, or, perhaps, both. The machines I refer to are the Voisin canard hydro-aeroplane and the Blériot canard land machine."

"I do not know exactly what were the difficulties met with in these machines, but one of them was, I believe, the great risk to the pilot in the event of a rough landing, the weight of the engine, being at the extreme rear, throwing too great a strain on the fuselage, and in the event of a smash, it would mean certain death to the pilot. Another point is the engine being behind the pilot he cannot attend to it without landing, if it should not run properly. And, further, Mr. Handley Page's reply to Mr. H. H. Grove's query: 'What was the real cause of failure in full-sized canard type machines?' 'Too much surface in front of the centre of pressure led me to the conclusion that it was sheer waste of time and energy trying to prove scientifically that the canard type model was suitable for full-sized work.'"

"Therefore research work with this type of model with a view to full-sized work should be abandoned. This is the idea I meant to convey. I do not say that nothing can be learnt from this type, because undoubtedly much can still be learnt from experiments made with such models. A point not mentioned above is the fact that, in full-sized work, front elevators are now practically discarded; evidently full-sized machines are better without them. If, in the face of the above facts, any of your readers have reasons to still believe in the utility of research work with canard-type models, either with covered-in fuselage or without, in relation to full-sized work, I shall be glad to know why."

Referring to Mr. Evans' communication, a point overlooked by him is the *indirect* value that model experiments made with canard models of untried or but little tried types would undoubtedly have on the problem of longitudinal stability in general. We cannot know too much about *every* type. Any one type is bound to have *some* advantage which another type has not. The problem is to find the type possessing the maximum of advantages with the minimum of disadvantages. This can only be discovered by a vast number of experiments made with every possible type. This means decades, it may be centuries of work. The steam engine, old as it is, is still being improved, to say nothing of the printing-press and even older inventions.

Efficiency Formulæ.

"I am sending you an efficiency formula," writes Mr. F. Whitworth, "with the hope that it will be subject to criticism in your columns. A correct efficiency formula is most needed for model aeroplanes, and a good 'bout of criticism' would no doubt soon bring one to light. My own suggestion is the following:—

$$\frac{\text{Weight of model}}{\text{weight of rubber}} \times \frac{\text{duration}}{\text{loading}}$$

Loading in square inches per oz. [ozs. per sq. ft. is, we presume, meant]. This brings distance into the formula, because loading really means speed (leaving out the varying efficiencies of different planes), and speed \times duration = distance, so that the formula boiled down

becomes $\frac{\text{weight of model}}{\text{weight of rubber}} \times \text{distance}$. Of course the glide of the

model is taken here, a bad point in some respects, but still it is the most efficient model which climbs highest and therefore glides best.

"This formula brings out the most efficient lifting surface, because it favours the model which flies slowest on the least surface, and, therefore, which flies fastest for the least power by reduced head resistance. I propose sending you at an early date some results I have obtained from my own models, subjected to this formula, and, perhaps, you could get some well-known model makers to submit their results."

We shall always be pleased to publish such results, whenever space permits, but there are two fatal objections to the above formula. In the first place you cannot measure the distance accurately, not even when using an anemometer and correcting the same accurately. The velocity of the wind where the model is

and where the recording instrument is are not the same. It is true that the *mean* of a very large number of experiments might give you an approximately correct result. In the second place the rubber motor is not a scientific motor; the mere weight of rubber is not enough. We do not know the ft.-lbs. of energy the rubber gives out in unwinding. It does not give it out in any constant manner or at any even varying rate. Moreover, it varies probably with every wind, for it is wound up (*i.e.*, stretched) far beyond its elastic limit.

The last thing that we desire to do is to discourage any such experiments, but we cannot see how they can possibly come under the head of model research work. And unless a formula is (so far as we know) quite correct, *i.e.*, free from all conscious error, of what use is it? It has been decided not to make use of any such formula in this season's K. and M.A.A. competitions.

Model Aero Club for Hastings and St. Leonards.

An aero club has been formed in the districts of Hastings and St. Leonards for the building of models of every description. The Hon. Sec. (Mr. E. Taylor, 30, Perth Road, Silverhill, St. Leonards) will be glad to hear from anyone in the district interested in the subject.

**KITE AND MODEL AEROPLANE ASSOCIATION.***Official Notices.*

Affiliation.—The Bath and Somerset Aero Club and the South-Western Aero Club are now affiliated. It is hoped that others will join up. Any club now affiliating will be eligible for the Inter-Club Competition.

Official Trials.—The following dates were fixed (by the Secretaries' Guild) for official trials:—June 20th, Wimbledon Common; July 18th, Wanstead Flats; Aug. 20th, Hackney Marshes; Sept. 26th, Sudbury; Oct. 24th, Mitcham Common; Nov. 14th, Sudbury. All secretaries will, prior to the dates, publish the best way to their respective grounds.

Programme.—The programme has now gone to press, and it is hoped to be able to get it out this month, as usual. Any readers or friends other than members will have a copy forwarded on publication if they enclose penny stamp for postage.

Competition.—The *Model Engineer* Competition will be the first contest of the season and will be held on Wimbledon Common on June 13th. Entries close June 6th. Models must not weigh less than 8 ozs. The distance between the rubber hooks not to exceed the span. Minimum loading—Monoplanes, 6 ozs. per sq. ft.; biplanes, 4 ozs. Aspect ratio to be not less than 5 and not more than 12. Competition will be decided on the average of flights. No special rising surface allowed. Entry fees—Registration fee to members, 3d.; affiliated members, 1s.; non-members, 2s. Entry forms can be obtained from the Gen. Hon. Secretary, but must be returned to H. A. Lyche, Model Secretary, 46, Templesheen Road, East Sheen, S.W.

Subscriptions and Badges.—All members will, on receipt of their subscription, receive the official badge for 1914-15, and all competitors must wear same in all contests, to show the judges that their subscription has been paid. These badges will be ready to send out by 30th. All members should send along their subscriptions at once, so that they may receive their badges as soon as ready. The colour of badges will alter yearly.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Gen. Hon. Sec.

AFFILIATED MODEL CLUBS DIARY.

CLUB reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Leytonstone and District Aero Club (64, LEYSPRING ROAD).

MAY 24TH, at 6.30 a.m., flying Wanstead Flats; at 10.30 a.m., twin-screw r.o.g. duration competition, 8 oz. models, 4 oz. loading (models must rise off grass). May 31st, at 10.30 a.m., similar competition to above.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

MAY 23RD, flying at Sudbury. Reliability trials for silver and bronze medals.

Sheffield Ae.C. (41, CONISTON ROAD, ABBEYDALE, SHEFFIELD).

MAY 23RD (weather permitting), a demonstration will be given at 3 p.m. with a 4-ft. compressed-air flying monoplane, by Mr. Gumpert, at the Standhouse Aerodrome, Intake; also Novices' h.l. and record raising by members. May 30th, 4.30 p.m., hydro-aeroplane contest for "The President's Challenge Cup," at Tinsley Park Old Brick Yard.

UNAFFILIATED CLUBS.**Finsbury Park and District (66, ELFORT ROAD, HIGHBURY, N.).**

MAY 30TH, practice flying, Finsbury Park, 3 p.m.; duration and distance contests for r.o.g. tractors, 4.30 p.m. The hon. secretary, Mr. R. Mullin, has resigned office. Mr. B. H. Barnard was elected in his place.

Ilford Model Ae.C. (83, ENDSLEIGH GARDENS, ILFORD).

MAY 24TH, flying at 9.30 a.m., at Aerodrome, Hog Hill, Hainault Forest, near Chigwell Row. Special competitions will be organised for Whit-Monday.

Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).

MAY 23RD, exhibition flying contests, 4 p.m. No trials will be allowed after official starting time. May 26th, general meeting, Cedar Grove, 8 p.m.

S. Eastern Model Ae.C. (1, RAILWAY APPROACH, BROCKLEY).

WEEK-END flying on Woolwich Common and Blackheath, as usual. The hon. secretary will be pleased to hear from members who intend entering the next "Trophy" competition.

CORRESPONDENCE.

The Wright Patents.

[1860] Great harm is being done the American aeroplane industry by the public press in its reiteration of statement and suggestion that the court decision in favour of the Wrights gives them practically a monopoly on the manufacture of aeroplanes, and that it places them in position to dictate to the makers and users of aeroplanes *ad libitum*. This, it seems to me, is a delusion due to a too easy acceptance of conclusions based on gossip and prejudiced claims rather than on the sense and wording of Judge Hazel's decision.

If every aeroplane manufacturer in America, and every prospective purchaser of an aeroplane, and every man now owning and using an aeroplane, will carefully read Judge Hazel's decision, and then, if necessary, read it through again, they will awake to the fact that it upholds a series of combinations. First, the means for *simultaneously* raising one *aileron* and depressing the other. Second, in combination with this simultaneous operation of the *ailerons* or marginal portions, the use of the rudder. Third, in combination with the foregoing, the use of the front elevator.

In other words, the basic element of the claim as sustained lies in the simultaneous operation of the *ailerons* or marginal portions. This one word, *simultaneous*, on analysis, makes reasonable and logical the broad support given to the Wright claims by the court. Once admit that the Wrights were the first to patent the idea of and to show means for the simultaneous operation of the *ailerons*, and it is evident that the rest of the combination follows as a matter of course. This also explains the position of the Court of Appeals in sustaining "the reasoning" by which Judges Hazel and Hand reached their decision.

Judge Hazel did not find that the Wrights invented or patented any of the individual elements covered by their patent. He says: "They (the Wrights) were not the first to conceive the idea of using monoplane or biplane surfaces for flying, nor the first to support the two planes at their margins one above the other, or to use the vertical tails or rudders for steering, or to place horizontal rudders forward of the machine to guide it upwards or downwards in its flight. The prior separate use of such elements is freely admitted by the patentees, but they assert, rightly I think, that the patented combination was a new combination"

Nor did the court by any means uphold all the claims of the Wright patent, but the decision flatly states: "There are eighteen claims in the patent, but Claims 3, 7, 14, and 15 only are infringed."

In support of this view of the decision a few paragraphs from it may be of interest. The infringed claims are quoted, and are of interest here in part: Claim 3. ". . . . means for simultaneously imparting such movement to said lateral marginal portions"

From Claim 7: ". . . . the combination with an aeroplane, and means for *simultaneously* moving the lateral portions thereof into different angular relations of a vertical rudder, and means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplane having the smaller angle of incidence and offering the least resistance to the atmosphere"

Claim 14 adds to the combination described in Claim 7 "a horizontal rudder provided with means for presenting its upper or under surface to the resistance of the atmosphere"

Claim 15 merely establishes the locations of the horizontal and vertical rudders.

Most important in this connection is the Court's quotation from the specifications of the Wright patent:—

" any construction whereby the angular relations of the lateral margins of the aeroplanes may be varied in opposite directions with respect to the normal planes of said aeroplanes comes within the scope of our invention."

In discussing the *ailerons* illustrated by the Richard Harte patent of 1870, the Court says:—

"While the extensions may be movable above and below the normal of the main body, yet there is no simultaneous manual control, and THEREFORE, in my opinion, the described means do not correspond to the combination in Claim 3 of the Wright patent. . . ."

Discussing the Mouillard patent the decision repeats: "Nor does it show means for *simultaneously* increasing the lift of one *aileron* and depressing the other, . . . nor does it show the use of a rudder in conjunction with the depressible portions."

The Mattullath application is discarded for similar reasons: ". . . The structure is not provided with movable side *ailerons* simultaneously adjustable. . . ."

The problem was solved before the original filing of the decision. Professor A. A. Merrill more than two years ago exposed the apparent weakness of the Wright pretensions to monopoly. A very

successful German machine has long used a system of lateral balance which in no way appears to conflict with the sustained claims, and there are still other machines which certainly seem not to infringe under the decision. I awaited the final decision of the courts before announcing any change, because I felt confident of ultimate success in the litigation, and had a system of control that was satisfactory, and had been widely advertised. But we have been experimenting for years with an alternate system which is equal to, if not better than the old one, and with which we now equip all Curtiss machines. These facts seem entitled to publicity as wide as that given the statements asserting the almost unlimited scope of the decision.

GLENN H. CURTISS.

Flying Corps Accident Fund.

[1861] The Women's Patriotic Aerial League have resolved to raise a fund for the purpose of offering financial assistance to the widows or nearest dependents of British naval and military officers, non-commissioned officers and mechanics who are killed or permanently disabled while on duty. The League feels that special help is needed because the science is still in its experimental stages, and the brave men who are conquering difficulties are exposed to grave dangers and risks in the service of their country.

The widows of those killed on flying duty receive the same pensions as the widows of men killed on active service; these pensions are very small indeed, and generally mean a life of great privation for those who have the misfortune to lose their husbands, especially if they have children and do not possess private means. Flying men are continually in danger, whereas men on active service are only in danger in time of war. Financial assistance from this fund will also be extended to the widows or families of civilian pilots.

We would ask all patriotic men and women to subscribe to this fund, which will be administered by the Executive Committee of the League. Every subscription will, unless otherwise marked, be acknowledged in the London or Local Press.

Kindly send all cheques and postal orders to Colonel H. S. Massy, C.B., Hon. Treasurer of the Fund, 25, Denison House, Victoria, S.W., and crossed Flying Corps Accident Fund.

ALICE O'HAGAN, Chairman, Women's Patriotic Aerial League.

E. FREMANTLE, Admiral.

H. S. MASSY, Colonel.

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An Attractive Insurance for Aviators.

THOSE who are actively engaged in aviation and who wish to insure their life should make a point of getting particulars of the special policy which is issued by the Eagle Insurance Co., 79, Pall Mall, S. W. This old-established office, now under the management of Mr. F. Bertram Galer, F.I.A., is greatly extending the facilities offered, and is taking a much more reasonable view with regard to aviation risks than most other insurance companies. The policy referred to is an Endowment Insurance, with profits, for 20 years or less, not exceeding £2,000, and the chief points are that the applicant must pass a satisfactory medical examination and be between 20 and 40 years of age. Naturally an extra premium is charged over the ordinary rate, but it is quite moderate, and, moreover, the company is prepared to consider a proposal for increasing the policy the second year.

A Change of Address.

OWING to the increase in their business Messrs. Withers and Spooner, the well-known patent agents, have found it necessary to remove to more commodious premises. On and after June 1st their address will be Staple House, 51 and 52, Chancery Lane, London, W.C., one door from the Patent Office.

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